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A CHECK-LIST OF THE FOSSIL AND  
PREHISTORIC BIRDS OF NORTH  
AMERICA AND THE  
WEST INDIES

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**A CHECK-LIST OF THE FOSSIL AND PRE-HISTORIC BIRDS OF NORTH AMERICA AND THE WEST INDIES**

By ALEXANDER WETMORE

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The present check-list is an amplification of the one published in the Smithsonian Miscellaneous Collections in 1940 (vol. 99, No. 4) and is complete to November 1955 so far as records have come to attention. To the present time these check-lists have covered the area of the check-list of living birds of the American Ornithologists' Union, namely North America north of México, with the addition of Baja California. It has seemed desirable now to include also the records, comparatively few in number, for México and the West Indies, since this information is complementary and otherwise is available only in widely scattered sources. Various of these latter records are of species of birds described from bones found during archeological excavations in Indian kitchen middens of pre-Columbian age or during the exploration of caverns. The species concerned have long been extinct, so that the only knowledge regarding them is embodied in their skeletal remains. No living examples have been known. It is useful therefore to include them for reference with other species of fossil status, since they do not figure in check-lists of existing birds and since possibly they may be encountered at some future time in true fossil form. They have the same pertinence therefore as species described from Pleistocene beds whose bones have been found subsequently in Recent deposits.

The considerable amount of information now available has allowed more detail relative to geological formations from which the various records have come, and these data have been brought down to date as far as practicable. In this I have had the advice in certain cases of Druid Wilson, of the U. S. Geological Survey, and also have profited from discussions with Dr. C. Wythe Cooke of the same service, particularly as to formations of the southeastern United States.

In the records from the Pleistocene there has been sufficient study of the deposits of this age known from the western United States to allow indication of position, as to whether they are considered early or

late, of most of the faunas. The situation in Florida is not so clear. Bone beds at Melbourne and Vero overlie the Anastasia formation, a marine Pleistocene deposit, and therefore are considered late Pleistocene. Apparently a newer find at Haile in Alachua County may be from a similar level. The Seminole Field in Pinellas County also appears to overlie the beds of the west coast of Florida that are considered equivalent to the Anastasia, if not exactly the same formation. However, Pliocene exposures are near at hand so that the sequence, from present knowledge, is not clear-cut as it is at Melbourne. Information relative to the localities at Bradenton, Sarasota, and on the Itchucknee River is far from definite, and other deposits found in caverns, while evidently Pleistocene, are still more uncertain as to actual relationship within that period. Collecting continues actively in the Florida Pleistocene, and presently there should be accumulated sufficient data on the avifauna to permit a reasonable correlation. In the meantime it has seemed better to list all the Florida records as Pleistocene without attempt to indicate the level. To list Melbourne and Vero alone, for example, as late Pleistocene might be misleading.

Recent investigations of Dr. Joseph T. Gregory (Condor, 1952, pp. 73-88) have changed measurably the time-honored concept in which the species of *Ichthyornis* have been associated with the *Hesperornis* group in a superorder (Odontognathae) of the Neornithes, characterized by the possession of teeth. The skull of *Ichthyornis* always has presented an anomaly in that the teeth were in sockets instead of in grooves as in *Hesperornis*. Further, the mandible, or lower jaw, was unduly large in comparison with the rest of the skull and the body skeleton. Dr. Gregory has shown that the jaws attributed to *Ichthyornis* in reality are reptilian and are those of a small mosasaur.

These conclusions destroy the main reasons for the association of *Ichthyornis* and *Hesperornis* in one superorder, though still leaving *Ichthyornis* apart from birds known from later periods to the present, in the biconcave vertebrae. In preliminary consideration it seemed that it might be desirable in the classification to cancel the category of superorders, but on further consideration it appears useful to emphasize the considerable and definite differences that separate *Hesperornis*, *Ichthyornis*, and the penguins from each other and from other groups of birds. This may be accomplished through a new superorder Ichthyornithes for the order Ichthyornithiformes, leaving *Hesperornis* and those others placed near it in the Odontognathae. This will serve as stated above to call attention to the existing peculiarities of these groups and will give a balanced treatment.

The family Mancallidae is added for the two species of *Mancalla* at present recognized, since resemblance between these and the great auk appears due to convergence. The two west-coast forms differ from other auks in the marked modification of the wing for use as a flipper. The genera *Paloelodus* and *Megapaloelodus* have been placed with the typical flamingos in the Phoenicopteridae, a group to which they are unquestionably related. Dr. Hildegardie Howard recently pointed out their differences in the shorter, heavier metatarsus, nonpneumatic femur, and different form in the tibiotarsus and has proposed the family Paloelodidae. To the differences outlined by Dr. Howard there may be added the form of the bill, which, to judge from one incomplete specimen of *Paloelodus ambiguus* Milne Edwards of the Oligocene of western Europe, was gooselike and not bent downward as in the true flamingos. It may be noted also that the toes in *Paloelodus* were definitely longer.

The modern species that occur in the fossil record are distinguished from those not known in living form by the inclusion of a common name in the heading and the statement that the bird is one found in modern form. Most of these are listed under specific scientific names without regard to local race, since most subspecies may not be identified from bones. It is extremely doubtful procedure in most instances to assume that Pleistocene subspecies were the same as those encountered in the region today, and assumption of race is made only where there is reasonable certainty of the identification. The specific names therefore are used in an inclusive sense, though it is evident in wide-ranging groups that two or more subspecies may be covered in the fossil record, for example, in the ruffed grouse, *Bonasa umbellus*, where bones identified as this species are known from such widely separated localities as Maryland and California. This should be understood particularly in cases like that of the raven, *Corvus corax*, or marsh hawk, *Circus cyaneus*, where the range extends to other continents.

The present list gives the record of 189 forms still living, and of 248 species recorded only in an extinct state, this including 11 kinds known only from bones in cave or midden deposits of Recent age. There remain the 12 additional names of uncertain status listed at the end under the heading INCERTAE SEDIS. The increase from the 165 modern forms and 184 extinct species of the list of 1940 is indicative of the growth in knowledge in this field during the comparatively brief interval of 15 years but reveals only part of the increase since many additional records have been found for numerous living species included in 1940.

## Class AVES: BIRDS

## Subclass NEORNITHES: TRUE BIRDS

## Superorder ODONTOGNATHAE: NEW WORLD TOOTHED BIRDS

## Order HESPERORNITHIFORMES: HESPERORNITHES

## Family HESPERORNITHIDAE: HESPERORNITHES

## Genus HESPERORNIS Marsh

*Hesperornis* MARSH, Amer. Journ. Sci., ser. 3, vol. 3, 1872, p. 360. Type, by monotypy, *Hesperornis regalis* Marsh.

***Hesperornis crassipes* (MARSH)**

*Lestornis crassipes* MARSH, Amer. Journ. Sci., ser. 3, vol. 11, 1876, p. 509.

Upper Cretaceous (Niobrara formation): Western Kansas.

***Hesperornis montana* SHUFELDT**

*Hesperornis montana* SHUFELDT, Auk, vol. 32, No. 3, July 1915, p. 293, pl. 18, figs. 4, 6, 8, 10, 12.

Upper Cretaceous (Claggett formation): 1 mile above mouth of Dog Creek, Fergus County, Montana.

***Hesperornis regalis* MARSH**

*Hesperornis regalis* MARSH, Amer. Journ. Sci., ser. 3, vol. 3, 1872, p. 357.

Upper Cretaceous (Niobrara formation): Smoky Hill River, 20 miles east of Wallace (type locality), and Two Mile Creek, Smoky Hill River, Logan County, Kansas.

***Hesperornis gracilis* MARSH<sup>1</sup>**

*Hesperornis gracilis* MARSH, Amer. Journ. Sci., ser. 3, vol. 11, 1876, p. 510.

Upper Cretaceous (Niobrara formation): Near Smoky Hill River, western Kansas.

Genus CONIORNIS Marsh<sup>2</sup>

*Coniornis* MARSH, Amer. Journ. Sci., ser. 3, vol. 45, 1893, p. 82. Type, by monotypy, *Coniornis altus* Marsh.

***Coniornis altus* MARSH**

*Coniornis altus* MARSH, Amer. Journ. Sci., ser. 3, vol. 45, 1893, p. 82, text fig.

Upper Cretaceous (Judith River formation): Dog Creek, Fergus County, Montana.

<sup>1</sup> Gregory, Condor, vol. 54, No. 2, Mar. 26, 1952, p. 74, concludes that the genus *Hargeria*, erected for this species by Lucas, is not separable from *Hesperornis*.

<sup>2</sup> Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, pp. 16, 75, considers this a synonym of *Hesperornis*.

Family BAPTORNITHIDAE<sup>3</sup>: BAPTORNITHES

## Genus BAPTORNIS Marsh

*Baptornis* MARSH, Amer. Journ. Sci., ser. 3, vol. 14, 1877, p. 86. Type, by monotypy, *Baptornis advenus* Marsh.

**Baptornis advenus** MARSH

*Baptornis advenus* MARSH, Amer. Journ. Sci., ser. 3, vol. 14, 1877, p. 86.

Upper Cretaceous (Niobrara formation): Wallace County (type locality), and Butte Creek, Logan County, Kansas.

Superorder ICHTHYORNITHES: ICHTHYORNIS and ALLIES

Order ICHTHYORNITHIFORMES: ICHTHYORNIS and ALLIES

## Family ICHTHYORNITHIDAE: ICHTHYORNITHES

## Genus ICHTHYORNIS Marsh

*Ichthyornis* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, November 1872, p. 344.  
Type, by monotypy, *Ichthyornis dispar* Marsh.

**Ichthyornis agilis** (MARSH)

*Graculavus agilis* MARSH, Amer. Journ. Sci., ser. 3, vol. 5, 1873, p. 230.

Upper Cretaceous (Niobrara formation): Butte Creek, Logan County, Kansas.

**Ichthyornis anceps** (MARSH)

*Graculavus anceps* MARSH, Amer. Journ. Sci., ser. 3, 1872, p. 364.

Upper Cretaceous (Niobrara formation): North Fork Smoky Hill River, Logan County, about 12 miles east of Wallace, Kansas.

**Ichthyornis dispar** MARSH

*Ichthyornis dispar* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, 1872, p. 344.

Upper Cretaceous (Niobrara formation): Near Solomon River, Kansas.

**Ichthyornis latus** (MARSH)

*Graculavus latus* MARSH, Amer. Journ. Sci., ser. 3, vol. 14, 1877, p. 253.

Upper Cretaceous: Near McKinney, Texas.

<sup>3</sup> Lambrecht, Handb. Palaeorn., 1933, pp. 258-260, unites this with the family Enaliornithidae, on what seem insufficient grounds. As suggested by Lucas, Proc. U. S. Nat. Mus., vol. 26, 1903, p. 555, *Baptornis* probably belongs in a distinct order.

**Ichthyornis tener MARSH**

*Ichthyornis tener* MARSH, *Odontornithes*, 1880, pp. 151, 198, pl. 30, fig. 8.

Upper Cretaceous (Niobrara formation): Wallace County, Kansas.

**Ichthyornis validus MARSH**

*Ichthyornis validus* MARSH, *Odontornithes*, 1880, pp. 147, 153, 198, pl. 30, figs. 11-14.

Upper Cretaceous (Niobrara formation): Near Solomon River, Kansas.

**Ichthyornis victor MARSH**

*Ichthyornis victor* MARSH, *Amer. Journ. Sci.*, ser. 3, vol. 11, 1876, p. 511.

Upper Cretaceous (Niobrara formation): Wallace County (type locality), and Hackberry Creek, near Smoky Hill River, Gove County, Kansas.

**Family APATORNITHIDAE: APATORNITHES****Genus APATORNIS Marsh**

*Apatornis* MARSH, *Amer. Journ. Sci.*, ser. 3, vol. 5, Jan. 21, 1873, p. 162. Type, by monotypy, *Ichthyornis celer* Marsh.

**Apatornis celer (MARSH)**

*Ichthyornis celer* MARSH, *Amer. Journ. Sci.*, ser. 3, vol. 5, 1873, p. 74.

Upper Cretaceous (Niobrara formation): Butte Creek, Logan County, near Smoky Hill River, Kansas.

**Superorder NEOGNATHAE: TYPICAL BIRDS****Order CAENAGNATHIFORMES: CAENAGNATHUS****Family CAENAGNATHIDAE: CAENAGNATHUS****Genus CAENAGNATHUS Sternberg**

*Caenagnathus* STERNBERG, *Journ. Pal.*, vol. 14, January 1940, p. 81. Type, by original designation, *Caenagnathus collinsi* Sternberg.

**Caenagnathus collinsi STERNBERG<sup>4</sup>**

*Caenagnathus collinsi* STERNBERG, *Journ. Pal.*, vol. 14, January 1940, p. 81, figs. 1-6.

Upper Cretaceous (Pale beds, Belly River series): Quarry No. 112, Steveville map area, near mouth of Sand Creek, Alberta, Canada.

<sup>4</sup> This interesting species, known from a nearly complete mandible, is listed in the above superorder tentatively. It is not absolutely certain that it is avian.

## Order GAVIIFORMES: LOONS

## Family GAVIIDAE: LOONS

## Subfamily GAVINAE

## Genus GAVIA Forster

*Gavia* J. R. FORSTER, Enchirid. Hist. Nat., 1788, p. 38. Type, by subsequent designation, *Colymbus imber* Gunnerus = *C. immer* Brünnich (Allen, 1907).

***Gavia immer* (BRÜNNICH): Common Loon**

*Colymbus Immer* BRÜNNICH, Orn. Borealis, 1764, p. 38.

Modern form reported from late Pleistocene (Palos Verdes sand) : Newport Bay, Orange County, California.

***Gavia arctica* (LINNAEUS): Arctic Loon**

*Colymbus arcticus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 135.

Modern form reported from late Pleistocene (Palos Verdes sand) : San Pedro, Los Angeles County, California.

***Gavia concinna* WETMORE**

*Gavia concinna* WETMORE, Journ. Morph., vol. 66, No. 1, Jan. 2, 1940, p. 25, figs. 1-4.

Pliocene (Etchegoin formation) : Sweetwater Canyon (type locality),  $5\frac{1}{2}$  miles east of King City, Monterey County, California. Middle Pliocene (San Diego formation) : Washington Boulevard Freeway, San Diego, California. Pliocene (Bone Valley formation) : near Brewster, Polk County, Florida.

***Gavia palaeodytes* WETMORE**

*Gavia palaeodytes* WETMORE, Proc. New England Zoöl. Club, vol. 22, June 23, 1943, p. 64, figs. 1-2.

Middle Pliocene (Bone Valley formation) : Pierce (type locality) and Brewster, Polk County, Florida.

***Gavia howardae* BRODKORB**

*Gavia howardae* BRODKORB, Condor, vol. 55, No. 4, July 20, 1953, p. 212, fig. 1B.

Pliocene (Bone Valley formation) : Pierce (type locality) and Brewster, Polk County, Florida.

## Subfamily GAVIELLINAЕ: GAVIELLA

## Genus GAVIELLA Wetmore

*Gaviella* WETMORE, Journ. Morph. vol. 66, Jan. 2, 1940, p. 28. Type, by original designation, *Gavia pusilla* Shufeldt.

**Gaviella pusilla (SHUFELDT)**

*Gavia pusilla* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 70, pl. 13, fig. 106.

Probably from Oligocene (White River formation): near Lusk, Wyoming.<sup>5</sup>

**Order COLYMBIFORMES: GREBES****Family COLYMBIDAE: GREBES****Genus COLYMBUS Linnaeus**

*Colymbus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 135. Type, by subsequent designation, *Colymbus cristatus* Linnaeus (Baird, Brewer, and Ridgway, 1884).

**Subgenus DYTES Kaup**

*Dytes* KAUP, Skizz. Entw.-Gesch. Eur. Thierw., 1829, p. 41. Type, by subsequent designation, *Dytes cornutus* Kaup = *Colymbus auritus* Linnaeus (Gray, 1842).

***Colymbus auritus* LINNAEUS: Horned Grebe**

*Colymbus auritus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 135.

Modern form reported from Pleistocene: Cavern deposits of Tennessee; Seminole Field, Pinellas County, and Itchucknee River, Columbia County, Florida.<sup>6</sup>

***Colymbus caspicus* HABLIZL: Eared Grebe**

*Colymbus caspicus* HABLIZL, Neue Nordische Beyträge, vol. 4, 1783, p. 9.

Modern form reported from Pliocene (Ogallala formation): Edson Quarry, Sherman County, Kansas. Late Pleistocene: Fossil Lake, Oregon; San Pedro (Palos Verdes sand, lumberyard locality), Los Angeles County, California; Meade County (Vanhem formation, Jones fauna), Kansas.

***Colymbus oligoceanus* SHUFELDT**

*Colymbus oligoceanus* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 54.

? Oligocene (John Day): Lower Willow Creek, Baker County, Oregon.

<sup>5</sup> See Wetmore, A., Journ. Morph., vol. 66, Jan. 2, 1940, p. 30.

<sup>6</sup> Specimens from Fossil Lake, Oregon, formerly included under this species have been found by Hildegarde Howard to represent *Colymbus caspicus* and *Podilymbus podiceps*.

**Colymbus parvus SHUFELDT**

*Colymbus parvus* SHUFELDT, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 6, July 9, 1913, p. 136, pl. 39, fig. 477.

Pliocene (Tulare formation): Kern County, California. Middle Pliocene (San Diego formation): San Diego, California. Late Pleistocene: Fossil Lake (type locality), Oregon.

**Genus PLIODYTES Brodkorb**

*Pliodytes* BRODKORB, Ann. Mag. Nat. Hist., ser. 12, vol. 6, December 1953, p. 953, 1 fig. Type, by original designation, *Pliodytes lanquisti* Brodkorb.

**Pliodytes lanquisti BRODKORB**

*Pliodytes lanquisti* BRODKORB, Ann. Mag. Nat. Hist., ser. 12, vol. 6, December 1953, p. 953, 1 fig.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

**Genus AECHMOPHORUS Coues**

*Aechmophorus* COUES, Proc. Acad. Nat. Sci. Philadelphia, vol. 14, No. 5, April-May (Aug. 1), 1862, p. 229. Type, by original designation, *Podiceps occidentalis* Lawrence.

**Aechmophorus occidentalis (LAWRENCE): Western Grebe**

*Podiceps occidentalis* LAWRENCE, in Baird, Cassin, and Lawrence, Rep. Expl. and Surv. R. R. Pac., vol. 9, 1858, pp. liv, 892, 894.

Modern form reported from late Pleistocene: Rodeo, San Francisco Bay region.

**Aechmophorus lucasi MILLER**

*Aechmophorus lucasi* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 4, Feb. 4, 1911, p. 83, figs. 1-3.

Late Pleistocene: Fossil Lake (type locality), Oregon;<sup>7</sup> Palos Verdes sand, Newport Bay, Orange County, Playa del Rey, San Pedro, Los Angeles County, and near Manix, San Bernardino County, California.

<sup>7</sup> Includes various specimens formerly listed under *Colymbus griseogena* and *Aechmophorus occidentalis*. Hildegard Howard (Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, pp. 148-151) considers *lucasi* the Pleistocene ancestor of modern *A. occidentalis*, listing it as *Aechmophorus occidentalis lucasi*, the relationship being expressed in the sense of distribution through time rather than in the geographic sense of subspecies existing simultaneously.

Genus **PODILYMBUS** Lesson

*Podilymbus* LESSON, Traité d'Orn., livr. 8, June 11, 1831, p. 595. Type, by monotypy, *Podiceps carolinensis* Latham = *Colymbus podiceps* Linnaeus, *Podilymbus podiceps* (LINNAEUS): Pied-billed Grebe<sup>8</sup>

*Colymbus Podiceps* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 136.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Itchtucknee River, Columbia County, and Haile, Alachua County, Florida. Late Pleistocene: Fossil Lake, Oregon; Rancho La Brea, Los Angeles, and McKittrick, Kern County, California. Late Pleistocene or early Recent: Tepexpan, México.

Order PROCELLARIIFORMES: ALBATROSSES, SHEARWATERS,  
PETRELS, and ALLIES

## Family DIOMEDEIDAE: ALBATROSSES

Genus **DIOMEDEA** Linnaeus

*Diomedea* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 132. Type, by subsequent designation, *Diomedea exulans* Linnaeus (Gray, 1840).

*Diomedea albatrus* PALLAS: Short-tailed Albatross

*Diomedea albatrus* PALLAS, Spic. Zool., vol. 1, fasc. 5, 1769, p. 28.

Modern form reported from late Pleistocene (Palos Verdes sand): Newport Bay, Orange County, Playa del Rey, Los Angeles County, California.

*Diomedea anglica* LYDEKKER

*Diomedea anglica* LYDEKKER, Cat. Foss. Birds Brit. Mus., 1891, p. 189, fig. 42.

Pliocene (Bone Valley formation): Pierce, Polk County, Florida.<sup>9</sup>

## Family PROCELLARIIDAE: SHEARWATERS and FULMARS

Genus **PUFFINUS** Brisson<sup>10</sup>

*Puffinus* BRISSON, Orn., 1760, vol. 1, p. 56; vol. 6, p. 130. Type, by tautonymy, *Puffinus* Brisson = *Procellaria puffinus* Brünnich.

<sup>8</sup> *Podilymbus magnus* Shufeldt, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 6, July 9, 1913, p. 136, pl. 38, figs. 439-440, 449, has been identified as *P. podiceps* by Wetmore, California Acad. Sci., vol. 23, Dec. 30, 1937, pp. 198-199.

<sup>9</sup> Described by Lydekker from the Upper Pliocene at Foxhall, Suffolk, England. Recorded from Florida by Wetmore, Proc. New England Zoöl. Club, vol. 22, June 23, 1943, pp. 66-67, pl. 12, figs. 10-15.

<sup>10</sup> *Puffinus parvus* Shufeldt, Ibis, October 1916, p. 632, from Recent deposits in the bone caves of Bermuda is considered a synonym of *Puffinus lherminieri*. *Puffinus megalii* Shufeldt, Ibis, October 1916, p. 630, from Recent deposits in the bone caves of Bermuda seemingly is *Puffinus puffinus*.

Subgenus **PUFFINUS** Brisson**Puffinus griseus** (GMELIN): Sooty Shearwater*Procellaria grisea* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 564.

Modern form reported from late Pleistocene (Palos Verdes sand): Newport Bay, Orange County; near San Pedro (lumberyard locality) and Playa del Rey, Los Angeles County, California.

**Puffinus puffinus** (BRÜNNICH): Common Shearwater*Procellaria Puffinus* BRÜNNICH, Orn. Borealis, 1764, p. 29.

Modern form reported from Pleistocene (Melbourne bone bed): Melbourne, Florida. Late Pleistocene (Palos Verdes sand): San Pedro and Playa del Rey, Los Angeles County, California.<sup>11</sup>

**Puffinus inceptor** WETMORE*Puffinus inceptor* WETMORE, Proc. California Acad. Sci., ser. 4, vol. 19, No. 8, July 15, 1930, p. 86, figs. 1-3.

Middle Miocene (Tremblor formation): Sharktooth Hill, about 7 miles northeast of Bakersfield, California.

**Puffinus diatomicus** MILLER*Puffinus diatomicus* L. H. MILLER, Carnegie Inst. Washington Publ. 349, August 1925, p. 111, pls. 1, 2, 7a.

Middle Miocene (Tremblor formation, *Turritella ocoyana* zone): Lompoc (type locality). Miocene (Monterey shale): Lomita and San Pedro breakwater, San Pedro, California.

**Puffinus kanakoffi** HOWARD<sup>12</sup>*Puffinus kanakoffi* HOWARD, Carnegie Inst. Washington Publ. 584, June 22, 1949, p. 187, pl. 2, figs. 3, 5.

Middle Pliocene (San Diego formation): Washington Boulevard Freeway, San Diego, California.

**Puffinus felthami** HOWARD<sup>12</sup>*Puffinus felthami* HOWARD, Carnegie Inst. Washington Publ. 584, June 22, 1949, p. 194, pl. 2, figs. 4, 6.

Late Lower Pliocene: 3 miles north of Corona del Mar, Orange County, California.

<sup>11</sup> The California records refer to *Puffinus puffinus opisthomelas* Coues, formerly listed as a separate species.

<sup>12</sup> Subgeneric allocation provisional.

## Subgenus ARDENNA Reichenbach

*Ardenna* REICHENBACH, *Avium Syst. Nat.*, 1852 (1853), p. iv. Type, by monotypy, *Procellaria major* Faber = *P. gravis* O'Reilly.

*Puffinus conradi* MARSH

*Puffinus conradi* MARSH, *Amer. Journ. Sci.*, ser. 2, vol. 49, 1870, p. 212.

Middle Miocene (Calvert formation) : Maryland.

## Genus FULMARUS Stephens

*Fulmarus* STEPHENS, in Shaw, *Gen. Zoöl.*, vol. 13, pt. 1, Feb. 18, 1826, p. 233. Type, by subsequent designation, *Procellaria glacialis* LINNAEUS (Gray, 1855).

*Fulmarus glacialis* (LINNAEUS) : Fulmar

*Procellaria glacialis* LINNAEUS, *Fauna Suecica*, ed. 2, 1761, p. 51.

Modern form reported from late Pleistocene (Palos Verdes sand) : Newport Bay, Orange County; San Pedro, Los Angeles County, California.

## Family HYDROBATIDAE: STORM PETRELS

## Genus OCEANODROMA Reichenbach

*Oceanodroma* REICHENBACH, *Avium Syst. Nat.*, 1852 (1853), p. iv. Type, by original designation, *Procellaria furcata* Gmelin.

*Oceanodroma hubbsi* MILLER

*Oceanodroma hubbsi* L. H. MILLER, *Condor*, vol. 53, No. 2, Mar. 27, 1951, p. 78, fig. 1.

Upper Miocene (Capistrano formation<sup>13</sup>) : About 1 mile south of Capistrano Beach, Orange County, California.

## Order PELECANIFORMES: TROPICBIRDS, PELICANS, FRIGATEBIRDS, and ALLIES

## Suborder PELECANI: PELICANS, BOOBIES, CORMORANTS, and DARTERS

## Superfamily PELECANOIDEA: PELICANS and ALLIES

## Family PELECANIDAE: PELICANS

## Genus PELECANUS Linnaeus

*Pelecanus* LINNAEUS, *Syst. Nat.*, ed. 10, vol. 1, 1758, p. 132. Type, by subsequent designation, *Pelconus onocrotalus* LINNÆUS (Gray, 1940).

<sup>13</sup> Possibly Lower Pliocene.

## Subgenus CYRTOPELICANUS Reichenbach

*Cyrtopelicanus* REICHENBACH, *Avium Syst. Nat.*, 1852 (1853), p. vii. Type, by original designation, *Pelecanus trachyrhynchus* Latham = *P. erythrorhynchos* Gmelin.

*Pelecanus erythrorhynchos* GMELIN: White Pelican

*Pelecanus erythrorhynchos* GMELIN, *Syst. Nat.*, vol. 1, pt. 2, 1789, p. 571.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; Manix lake beds, near Manix, San Bernardino County, California. ? Pleistocene: Rattlesnake Hill, Fallon, Nevada.

*Pelecanus halieus* WETMORE

*Pelecanus halieus* WETMORE, *Smithsonian Misc. Coll.*, vol. 87, No. 20, Dec. 27, 1933, p. 3, figs. 1-2.

Upper Pliocene (Hagerman lake beds): Near Hagerman, Idaho.

## Subgenus LEPTOPELICANUS Reichenbach

*Leptopelicanus* REICHENBACH, *Avium Syst. Nat.*, 1852 (1853), p. vii. Type, by original designation, *Pelecanus fuscus* Gmelin = *P. occidentalis* Linnaeus.

*Pelecanus occidentalis* LINNAEUS: Brown Pelican

*Pelecanus occidentalis* LINNAEUS, *Syst. Nat.*, ed. 12, vol. 1, 1766, p. 215.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, California.

## Family CYPHORNITHIDAE: CYPHORNITHES

## Genus CYPHORNIS Cope

*Cyphornis* COPE, *Journ. Acad. Nat. Sci. Philadelphia*, ser. 2, vol. 9, May 31, 1894, p. 449. Type, by monotypy, *Cyphornis magnus* Cope.

*Cyphornis magnus* COPE

*Cyphornis magnus* COPE, *Journ. Acad. Nat. Sci. Philadelphia*, ser. 2, vol. 9, May 31, 1894, p. 451.

Middle Oligocene: Carmanah Point, Vancouver Island, British Columbia.

## Genus PALAEOCHENÖIDES Shufeldt

*Palaeochenöides* SHUFELDT, *Geol. Mag.*, n.s. 4, vol. 3, August 1916, p. 347. Type, by monotypy, *Palaeochenöides mioceanus* Shufeldt.

**Palaeochenöides mioceanus SHUFELDT**

*Palaeochenöides mioceanus* SHUFELDT, Geol. Mag., n.s. 4, vol. 3, August 1916, p. 347, pl. 15.

Miocene (Hawthorn formation): Near source of Stono River, South Carolina.

Superfamily SULOIDEA: BOOBIES, CORMORANTS, DARTERS, and ALLIES

**Family SULIDAE: BOOBIES and GANNETS****Genus SULA Brisson**

*Sula* BRISSON, Orn., 1760, vol. 1, p. 60; vol. 6, p. 494. Type, by tautonymy, *Sula* Brisson = *Pelecanus piscator* Linnaeus.

**Subgenus SULA Brisson*****Sula stocktoni* MILLER**

*Sula stocktoni* L. H. MILLER, Publ. Univ. California at Los Angeles Biol. Sci., vol. 1, No. 5, Mar. 12, 1935, p. 75, fig. 2.

Middle Miocene (Monterey shale): Near Lomita, Los Angeles County, California.

***Sula willetti* MILLER**

*Sula willetti* L. H. MILLER, Carnegie Inst. Washington Publ. 349, August 1925, p. 112, pls. 3, 8, fig. 1.

Middle Miocene (Temblor formation, *Turritella ocoyana* zone): Lompoc, Santa Barbara County, California.

***Sula guano* BRODKORB**

*Sula guano* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 9, figs. 2, 5, 8.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

***Sula phosphata* BRODKORB**

*Sula phosphata* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 11, figs. 3, 6, 9.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

**Subgenus MICROSULA Wetmore**

*Microsula* WETMORE, Proc. U. S. Nat. Mus., vol. 85, Jan. 14, 1938, p. 25. Type, by original designation, *Sula (Microsula) avita* Wetmore.

**Sula avita** WETMORE

*Sula avita* WETMORE, Proc. U. S. Nat. Mus., vol. 85, Jan. 14, 1938, p. 22, figs. 2-3.

Middle Miocene (Calvert formation) : western shore of Chesapeake Bay, near Plumpoint, Calvert County, Maryland.

**Genus MIOSULA Miller**

*Miosula* L. H. MILLER, Carnegie Inst. Washington Publ. 349, August 1925, p. 114. Type, by monotypy, *Miosula media* Miller.

***Miosula media* MILLER**

*Miosula media* L. H. MILLER, Carnegie Inst. Washington Publ. 349, August 1925, p. 114, pl. 5.

Middle Miocene (Tremblor formation, *Turritella ocoyana* zone) : Lompoc, Santa Barbara County, California.

***Miosula recentior* HOWARD**

*Miosula recentior* HOWARD, Carnegie Inst. Washington Publ. 584, June 22, 1949, p. 190, pl. 2, figs. 1-2a.

Middle Pliocene (San Diego formation) : Curlew Street, opposite Ostego Drive, San Diego, California.

**Genus MORUS Vieillot**

*Morus* VIEILLOT, Analyse, April 1816, p. 63. Type, by monotypy, *Pelecanus bassanus* Linnaeus.

***Morus loxostyla* (COPE)<sup>14</sup>**

*Sula loxostyla* COPE, Trans. Amer. Philos. Soc., n.s., vol. 14, December 1870, p. 236, fig. 53.

Miocene : Calvert County (type locality), Maryland; New Jersey.

***Morus vagabundus* WETMORE**

*Moris vagabundus* WETMORE, Proc. California Acad. Sci., ser. 4, vol. 19, No. 8, July 15, 1930, p. 89, fig. 4.

Middle Miocene (Tremblor formation) : Sharktooth Hill (type locality), about 7 miles northeast, and west branch of Granite Creek, 11 miles north of Bakersfield, California.

<sup>14</sup> *Sula atlantica* Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 62, pl. 15, fig. 123, from the Miocene of New Jersey, is considered a synonym of *M. loxostyla*; cf. Wetmore, Auk, 1926, p. 465.

**Morus lompocana (MILLER)**

*Sula lompocana* L. H. MILLER, Carnegie Inst. Washington Publ. 349, August 1925, p. 114, pls. 4, 7b, 9.

Middle Miocene (Tremblor formation, *Turritella oyocana* zone): Lompoc, Santa Barbara County, California.

**Morus peninsularis BRODKORB**

*Morus peninsularis* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 8, figs. 1, 4, 7.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

**Morus reyana HOWARD**

*Moris reyana* HOWARD, Condor, vol. 38, No. 5, Sept. 15, 1936, p. 213, fig. 37.

Late Pleistocene (Palos Verdes sand): Newport Bay, Orange County; Playa del Rey (type locality), Los Angeles County, California.

## Family PHALACROCORACIDAE: CORMORANTS

Genus **GRACULAVUS** Marsh<sup>15</sup>

*Graculavus* MARSH, Amer. Journ. Sci., ser. 3, vol. 3, 1872, p. 363. Type, by subsequent designation, *Graculavus velox* Marsh (Hay, 1902).

**Graculavus pumilus MARSH**

*Graculavus pumilus* MARSH, Amer. Journ. Sci., ser. 3, vol. 3, 1872, p. 364.

Paleocene (Hornerstown marl): Hornerstown, New Jersey.

**Graculavus velox MARSH**

*Graculavus velox* MARSH, Amer. Journ. Sci., ser. 3, 1872, p. 363.

Paleocene (Hornerstown marl): Hornerstown, New Jersey.

Genus **PHALACROCORAX** Brisson<sup>16</sup>

*Phalacrocorax* BRISSON, Orn., 1760, vol. 1, p. 60; vol. 6, p. 511. Type, by tautonymy, *Phalacrocorax* Brisson = *Pelecanus carbo* Linnaeus.

**Phalacrocorax wetmorei BRODKORB**

*Phalacrocorax wetmorei* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 12, figs. 10, 11.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

<sup>15</sup> *Limosavis* Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 19, proposed as a new genus for *Graculavus velox* Marsh, is a synonym of *Graculavus* Marsh, as both names are based on the same species.

<sup>16</sup> No subgenera are recognized in recent studies of the cormorants.

**Phalacrocorax auritus** (LESSON): Double-crested Cormorant

*Carbo auritus* LESSON, *Traité d'Orn.*, livr. 8, June 11, 1831, p. 605.

Modern form reported from Pliocene: Dry Creek, Malheur County, Oregon. Upper Pliocene (Hagerman lake beds): Near Hagerman, Idaho. Pleistocene: Melbourne (stratum 2), Sarasota, Bradenton, Seminole Field, Pinellas County, Itchucknee River, and Vero, Florida. Late Pleistocene (Palos Verdes sand): Santa Monica and San Pedro, Los Angeles County, California. ? Pleistocene: Rattlesnake Hill, Fallon, Nevada.

**Phalacrocorax penicillatus** (BRANDT): Brandt's Cormorant

*Carbo penicillatus* BRANDT, *Bull. Sci. Acad. Imp. Sti. St.-Pétersbourg*, vol. 3, No. 4, Nov. 16, 1837, col. 55.

Modern form reported from late Pleistocene (Palos Verdes sand): Newport Bay, Orange County; Santa Monica and San Pedro (lumberyard locality), Los Angeles County, California.

**Phalacrocorax femoralis** MILLER

*Phalacrocorax femoralis* L. H. MILLER, *Condor*, vol. 31, No. 4, July 15, 1929, p. 167, figs. 58-59.

Upper Miocene (Modelo formation): Calabasas, Los Angeles County, California.

**Phalacrocorax idahensis** (MARSII)

*Graculus idahensis* MARSII, *Amer. Journ. Sci.*, ser. 2, vol. 49, 1870, p. 216.

Pliocene: Castle Creek; Owyhee County (type locality), Idaho; Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida. Upper Pliocene (Hagerman lake beds): Near Hagerman, Idaho.

**Phalacrocorax macropus** (COPE)

*Graculus macropus* COPE, *Bull. Geol. Geogr. Surv. Terr.*, vol. 4, No. 2, 1878, p. 386.

Late Pleistocene: Fossil Lake, Oregon.<sup>17</sup>

**Phalacrocorax marinavis** SHUFELDT

*Phalacrocorax marinavis* SHUFELDT, *Trans. Connecticut Acad. Sci.*, vol. 19, February 1915, p. 56, pl. 14, figs. 114, 116-118, 122.

? Oligocene (John Day): Willow Creek, Oregon.

<sup>17</sup> Shufeldt, *Auk*, 1915, pp. 485-488, has identified material from the Miocene of Montana as this species, but examination of the specimen reveals that this is in error.

**Phalacrocorax mediterraneus SHUFELDT**

*Phalacrocorax mediterraneus* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 58, pl. 15, fig. 138.

Lower Oligocene (Chadron formation): Gerry's Ranch, Weld County, Colorado.

**Phalacrocorax rogersi HOWARD**

*Phalacrocorax rogersi* HOWARD, Condor, vol. 34, No. 3, May 16, 1932, p. 118, fig. 19.

Early Pleistocene (Santa Barbara formation): Veronica Springs Stone Quarry, near Santa Barbara, California.

**Phalacrocorax kennelli HOWARD**

*Phalacrocorax kennelli* HOWARD, Carnegie Inst. Washington Publ. 584, June 22, 1949, p. 188, pl. 3, figs. 7-8a.

Middle Pliocene (San Diego formation): Washington Boulevard Freeway, San Diego, California.

## Family ANHINGIDAE: SNAKEBIRDS

## Genus ANHINGA Brisson

*Anhinga* BRISSON, Orn., 1760, vol. 1, p. 60; vol. 6, p. 476. Type, by tautonymy and monotypy, *Anhinga* Brisson = *Plotus anhinga* Linnaeus.

**Anhinga anhinga (LINNAEUS): Anhinga**

*Plotus Anhinga* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 218.

Modern form reported from Pleistocene (Melbourne bone bed): Melbourne (stratum 2), Florida.

## Order CICONIIFORMES: HERONS, STORKS, and ALLIES

## Suborder ARDEAE: HERONS, BITTERNS, and ALLIES

## Family ARDEIDAE: HERONS and BITTERNS

## Subfamily ARDEINAE: HERONS and EGRETS

Genus ARDEA Linnaeus<sup>18</sup>

*Ardea* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 141. Type, by subsequent designation, *Ardea cinerea* Linnaeus (Gray, 1840).

<sup>18</sup> *Ardea sellardsi* Shufeldt, Journ. Geol., January-February (January) 1917, p. 19, described from Vero (stratum 3), Florida, proves to be based on the tibiotarsus of *Meleagris gallopavo*. See Wetmore, Smithsonian Misc. Coll., vol. 85, No. 2, Apr. 13, 1931, p. 32.

**Ardea herodias LINNAEUS: Great Blue Heron**

*Ardea Herodias* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 143.

Modern form reported from Pleistocene: Melbourne,<sup>19</sup> Itchtucknee River, Bradenton and Seminole Field, Pinellas County, Florida. Late Pleistocene: Fossil Lake, Oregon; Rancho La Brea, Los Angeles, and McKittrick, Kern County, California.

**Ardea polkensis BRODKORB**

*Ardea polkensis* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 17, figs. 13, 14, 15.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

**Genus CASMERODIUS Gloger**

*Casmerodus* GLOGER, Hand- und Hilfsbuch Naturg., 1842 (1841), p. 412. Type, by subsequent designation, *Ardea egretta* Gmelin (Salvadori, 1882).

**Casmerodus albus (LINNAEUS): Common Egret**

*Ardea alba* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 144.

Modern form reported from Pleistocene: Melbourne, Seminole Field, Pinellas County, and Venice, Florida. Late Pleistocene: Rancho La Brea, Los Angeles, California; Baños de Ciego Montero, Santa Clara Province, Cuba.

**Genus LEUCOPHOYX Sharpe**

*Leucophoyx* SHARPE, Bull. Brit. Orn. Club, vol. 3, Apr. 30, 1894, p. xxxix.

Type, by original designation and monotypy, *Ardea candidissima* Gmelin = *Ardea thula* Molina.

**Leucophoyx thula (MOLINA): Snowy Egret**

*Ardea Thula* MOLINA, Sagg. Stor. Nat. Chili, 1782, p. 235.

Modern form reported from Pleistocene: Bradenton, Florida.

**Genus HYDRANASSA Baird**

*Hydranassa* BAIRD, in Baird, Cassin, and Lawrence, Rep. Expl. Surv. R. R. Pac., vol. 9, 1858, p. 660. Type, by original designation, *Ardea ludoviciana* Wilson = *Egretta ruficollis* Gosse.

**Hydranassa tricolor (MÜLLER): Tricolored Heron**

*Ardea tricolor* P. L. S. MÜLLER, Natursyst. Suppl., 1776, p. III.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

<sup>19</sup> The record from Vero (stratum 3) is now considered Recent. See Cooke, C. W., Florida Geol. Surv. Geol. Bull. 29, 1945, pp. 306-307.

### Genus FLORIDA Baird

*Florida* BAIRD, in Baird, Cassin, and Lawrence, Rep. Expl. and Surv. R. R. Pac., vol. 9, 1858, pp. xxi, xlvi, 659, 671. Type, by monotypy, *Ardea caerulea* Linnaeus.

**Florida caerulea (LINNAEUS): Little Blue Heron**

*Ardea caerulea* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 143.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

### Genus BUTORIDES Blyth

*Butorides* BLYTH, Cat. Birds Mus. Asiatic Soc., 1849 (1852), p. 281. Type, by monotypy, *Ardea javanica* Horsfield.

**Butorides virescens (LINNAEUS): Green Heron**

*Ardea virescens* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 144.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida. Late Pleistocene: Rancho La Brea, Los Angeles, California.

### Genus NYCTICORAX Forster

*Nycticorax* T. FORSTER, Syn. Cat. Brit. Birds, 1817, p. 59. Type, by tautonymy and monotypy, *Nycticorax infaustus* Forster = *Ardea nycticorax* Linnaeus.

**Nycticorax nycticorax (LINNAEUS): Black-crowned Night Heron**

*Ardea Nycticorax* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 142.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León, México; Bradenton, and Itchtucknee River, Florida. Late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

### Genus NYCTANASSA Stejneger

*Nyctanassa* STEJNEGER, Proc. U. S. Nat. Mus., vol. 10, Aug. 3, 1887, p. 295. Type, by original designation, *Ardea violacea* Linnaeus.

**Nyctanassa violacea (LINNAEUS): Yellow-crowned Night Heron**

*Ardea violacea* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 143.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.<sup>20</sup>

<sup>20</sup> *Larus vero* Shufeldt, Journ. Geol., 1917, p. 18, from stratum 3 of Vero, Florida, is *Nyctanassa violacea*, according to Wetmore, Smithsonian Misc. Coll., vol. 85, No. 2, 1931, pp. 3, 11, and 16. Cooke, Florida Geol. Surv., Geol. Bull. 29, 1945, pp. 306-307, considers this deposit to be of Recent age.

## Genus EOCEORNIS Shufeldt

*Eocornis* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 39. Type, by monotypy, *Eocornis ardetta* Shufeldt.

## Eoceanis ardetta SHUFELDT

*Eocornis ardetta* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 39, pl. 13, fig. 102.

Eocene (Bridger formation): Henry's Fork, Wyoming.

## Subfamily BOTAURINAE: BITTERNS

## Genus IXOBRYCHUS Billberg

*Ixobrychus* BILLBERG, Syn. Faunae Scand., vol. 1, pt. 2, 1828, p. 166. Type, by subsequent designation, *Ardea minuta* Linnaeus (Stone, 1907).

## Ixobrychus exilis (GMELIN): Least Bittern.

*Ardea exilis* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 645.

Modern form reported from late Pleistocene: Baños de Ciego Montero, Santa Clara Province, Cuba.

## Genus BOTAURUS Stephens

*Botaurus* STEPHENS, in Shaw, Gen. Zoöl., vol. 11, pt. 2, August 1819, p. 592. Type, by subsequent designation, *Ardea stellaris* Linnaeus (Gray, 1840).

## Botaurus lentiginosus (RACKETT): American Bittern

*Ardea lentiginosa* RACKETT, in Pulteney, Cat. Birds, Shells and . . . Plants of Dorsetshire, ed. 2, May 1813, p. 14.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, and Sarasota, Florida. Late Pleistocene: Fossil Lake, Oregon;<sup>21</sup> Rancho La Brea, Los Angeles, California.

## Genus BOTAUROIDES Shufeldt

*Botauroides* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 33. Type, by monotypy, *Botauroides parvus* Shufeldt.

## Botauroides parvus SHUFELDT

*Botauroides parvus* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 33.

Eocene (? Bridger formation): "Spanish John Meadow," Wyoming.

<sup>21</sup> *Ardea paloccidentalis* Shufeldt described from Fossil Lake is based on a fragmentary tarsometatarsus of the American bittern. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, pp. 156-157.

Suborder CICONIAE: STORKS, IBISES, and SPOONBILLS

Superfamily CICONIOIDEA: STORKS and WOOD IBISES

Family CICONIIDAE: STORKS and JABIRUS

Subfamily CICONIINAE: STORKS

Genus CICONIA Brisson

*Ciconia* BRISSON, Orn., 1760, vol. 1, p. 48; vol. 5, p. 361. Type, by tautonymy, *Ciconia* = *Ardea ciconia* Linnaeus.

*Ciconia maltha* MILLER

*Ciconia maltha* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 5, No. 30, Aug. 5, 1910, p. 440, figs. 1-7.

Upper Pliocene (Hagerman lake beds): Barbour Ranch, Snake River, Idaho. Pleistocene: American Falls, Idaho; Vero (stratum 2), Melbourne (stratum 2), Itchtucknee River, 6½ miles south of Marineland, Flagler County, Seminole Field, Pinellas County, and Venice, Florida. Late Pleistocene: Carpinteria, McKittrick, Rancho La Brea, Los Angeles (type locality), and near Manix, San Bernardino County, California; Baños de Ciego Montero, Santa Clara Province, Cuba.<sup>22</sup>

Subfamily MYCTERIINAE: WOOD IBISES

Genus MYCTERIA Linnaeus

*Mycteria* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 140. Type, by monotypy, *Mycteria americana* Linnaeus.

*Mycteria wetmorei* HOWARD<sup>23</sup>

*Mycteria wetmorei* HOWARD, Condor, vol. 37, Sept. 15, 1935, p. 253, fig. 47.

Late Pleistocene: Rancho La Brea, Los Angeles, California.

Superfamily THRESKIORNITHOIDEA: IBISES

Family THRESKIORNITHIDAE: IBISES and SPOONBILLS

Subfamily THRESKIORNITHINAE: IBISES

Genus PLEGADIS Kaup

*Plegadis* KAUP, Skizz. Entw.-Ges. Eur. Thierw., 1829, p. 82. Type, by monotypy, *Tantalus falcinellus* Linnaeus.

<sup>22</sup> Records formerly listed as *Jabiru mycteria* (Lichtenstein) have all been assigned to the present species by Hildegard Howard, in Carnegie Inst. Washington Publ. 530, Jan. 19, 1942, p. 202. *Jabiru weilli* Sellards, therefore, becomes a synonym of *Ciconia maltha*.

<sup>23</sup> Replaces *Mycteria americana* as listed in Check-list of North American Birds, ed. 4, 1931, p. 416.

**Plegadis chihi (VIEILLOT) : White-faced Ibis**

*Numenius chihi* VIEILLOT, Nouv. Dict. Hist. Nat., nouv. éd., vol. 8, March 1817, p. 303.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus EUDOCIMUS Wagler**

*Eudocimus* WAGLER, Isis von Oken, 1832, col. 1232. Type, by subsequent designation, *Scolopax rubra* Linnaeus (Reichenow, 1877).

**Eudocimus albus (LINNAEUS) : White Ibis**

*Scolopax alba* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 145.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, and Haile, Alachua County, Florida.

**Subfamily PLATALEINAE: SPOONBILLS****Genus AJAIA Reichenbach**

*Ajaia* REICHENBACH, Avium Syst. Nat., 1852 (1853), p. xvi. Type, by original designation, *Ajaia rosea* Reichenbach = *Platalca ajaja* Linnaeus.

**Ajaia ajaja (LINNAEUS) : Roseate Spoonbill**

*Platalca Ajaja* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 140.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Suborder PHOENICOPTERI: FLAMINGOS****Family PHOENICOPTERIDAE: FLAMINGOS****Genus PHOENICOPTERUS Linnaeus**

*Phoenicopterus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 139. Type, by monotypy, *Phoenicopterus ruber* Linnaeus.

**Phoenicopterus copei SHUFELDT**

*Phoenicopterus copei* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891, p. 820.

Late Pleistocene: Fossil Lake, Oregon.

**Phoenicopterus minutus HOWARD**

*Phoenicopterus minutus* HOWARD, Geol. Surv. Prof. Pap. 264-J, June 1955, p. 202, pl. 50.

Late Pleistocene; Manix lake beds, near Manix, San Bernardino County, California.

**Phoenicopterus stocki MILLER**

*Phoenicopterus stocki* L. H. MILLER, Wilson Bull., vol. 56, No. 2, June 1944, p. 77, figs. 1, 2.

Pliocene (Rincón) : Chihuahua, México.

**Phoenicopterus floridanus BRODKORB**

*Phoenicopterus floridanus* BRODKORB, Chicago Acad. Sci. Nat. Hist. Misc., No. 124, June 9, 1953, p. 1, figs. 1-2.

Pliocene (Bone Valley formation) : Near Brewster, Polk County, Florida.

**Family PALOELODIDAE: PALOELODUS and ALLIES****Genus MEGAPALOELODUS Miller**

*Megapaloelodus* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 86. Type, by original designation, *Megapaloelodus connectens* A. H. Miller.

**Megapaloelodus connectens MILLER**

*Megapaloelodus connectens* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 86, fig. 1.

Lower Miocene (Rosebud formation) : Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota (type locality).  
Upper Miocene (Barstow formation) : near Barstow, California.

**Order ANSERIFORMES: SCREAMERS, DUCKS, GEESE, and SWANS****Suborder ANSERES: DUCKS, GEESE, SWANS, and ALLIES****Family PARANYROCIDAE: PARANYROCA****Genus PARANYROCA Miller and Compton**

*Paranyroca* A. H. MILLER and L. V. COMPTON, Condor, vol. 41, No. 4, July 15, 1939, p. 153. Type, by original designation, *Paranyroca magna* Miller and Compton.

**Paranyroca magna MILLER and COMPTON**

*Paranyroca magna* A. H. MILLER and L. V. COMPTON, Condor, vol. 41, No. 4, July 15, 1939, p. 153, fig. 34 A, C, D, E.

Lower Miocene (Rosebud formation) : Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota.

**Family ANATIDAE: DUCKS, GEESE, and SWANS****Subfamily CYGNINAE: SWANS****Genus CYGNUS Bechstein**

*Cygnus* BECHSTEIN, Orn. Taschenb. Deutschl., vol. 2, 1803, p. 404, footnote.  
Type, by tautonymy, *Anas cygnus* Linnaeus.

Subgenus **STHENELIDES** Stejneger

*Sthenelides* STEJNEGER, Stand. Nat. Hist., vol. 4, 1885, p. 143. Type, by monotypy, *Anas melanorhyncha* Molina.

**Cygnus paloregonus** (COPE)<sup>24</sup>

*Cygnus paloregonus* COPE, Bull. Geol. Geogr. Surv. Terr., vol. 4, No. 2, 1878, p. 388.

Pleistocene: Froman's Ferry, Idaho. Late Pleistocene: Fossil Lake, Oregon (type locality).<sup>25</sup>

Genus **OLOR** Wagler

*Olor* WAGLER, Isis von Oken, 1832, col. 1234. Type, by subsequent designation, *Cygnus musicus* Bechstein = *Anas cygnus* Linnaeus (Gray, 1840).

Subgenus **OLOR** Wagler**Olor columbianus** (ORD): Whistling Swan

*Anas columbianus* ORD, in Guthrie, Geogr., 2d Amer. ed., 1815, p. 319.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida. Late Pleistocene: Rancho La Brea, Los Angeles, and McKittrick, Kern County, California.

Subgenus **CLANGOCYCNUS** Oberholser

*Clangocynus* OBERHOLSER, Emu, vol. 8, pt. 1, July 1908, p. 3. Type, by monotypy, *Cygnus buccinator* Richardson.

**Olor buccinator** (RICHARDSON): Trumpeter Swan

*Cygnus buccinator* RICHARDSON, in Wilson and Bonaparte, Amer. Orn., Jameson ed., vol. 4, August 1831, p. 345.

Modern form reported from Pleistocene: Aurora, Illinois; Itchtuck-nee River, Florida. Late Pleistocene: Fossil Lake, Oregon.

Subfamily **ANSERINAE**: GEESEGenus **BRANTA** Scopoli

*Branta* SCOPOLI, Annus I, Historico-Naturalis, 1769, p. 67. Type, by subsequent designation, *Anas bernicla* Linnaeus (Bannister, 1870).

<sup>24</sup> Subgeneric allocation tentative.

<sup>25</sup> Specimens named *Cygnus matthewi* and *Anser condoni* by Shufeldt are now identified as *C. paloregonus*. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, pp. 160, 162, 163.

**Branta canadensis (LINNAEUS): Canada Goose**

*Anas canadensis* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 123.

Modern form reported from Pleistocene: Santa Rosa Island, California; Seminole Field, Pinellas County, and Itchtucknee River, Florida. Early Pleistocene: Irvington, Alameda County, California. Late Pleistocene: Fossil Lake, Oregon;<sup>26</sup> Potter Creek Cave, Shasta County; Rancho La Brea, Los Angeles, San Pedro, Los Angeles County, and near Manix, San Bernardino County, California. ? Pleistocene: Rattlesnake Hill, Fallon, Nevada.<sup>27</sup>

**Branta canadensis hutchinsi (RICHARDSON): Richardson's Goose**

*Anser Hutchinsi* RICHARDSON, in Swainson and Richardson, Fauna Bor.-Amer., vol. 2, 1831 (1832), p. 470.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Itchtucknee River, and Melbourne, Florida.

**Branta bernicla (LINNAEUS): Brant**

*Anas bernicla* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 124.

Modern form reported from Pleistocene: Fossil Lake, Oregon.

**Branta esmeralda BURT**

*Branta esmeralda* BURT, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 18, No. 6, Mar. 19, 1929, p. 222, pl. 20.

Upper Miocene (Esmeralda formation): Fish Lake Valley, Esmeralda County, Nevada.

**Branta howardae MILLER**

*Branta howardae* L. H. MILLER, Condor, vol. 32, No. 4, July 15, 1930, p. 208, fig. 74.

Lower Pliocene (Ricardo formation): Mojave Desert area, Kern County, California.

**Branta dickeyi MILLER**

*Branta dickeyi* L. H. MILLER, Condor, vol. 26, No. 5, Sept. 15, 1924, p. 179, fig. 46.

Upper Pliocene: Dry Creek, Malheur County, Oregon. Late Pleistocene: McKittrick, California.

<sup>26</sup> Specimens from Fossil Lake range in size from modern *B. c. minima* to *B. c. canadensis*.

<sup>27</sup> Recorded as *Branta canadensis canadensis*.

**Branta hypsibata (COPE)<sup>28</sup>**

*Anser hypsibatus* COPE, Bull. Geol. Geogr. Surv. Terr., vol. 4, No. 2, 1878, p. 387.

Late Pleistocene: Fossil Lake, Oregon.

**Branta propinquua SHUFELDT**

*Branta propinquua* SHUFELDT, Journ. Acad. Nat. Sci. Philadelphia, 2d ser., vol. 9, sign. 53, Oct. 20, 1892, p. 407, pl. 15, fig. 17.

Late Pleistocene: Fossil Lake, Oregon.

**Genus ANABERNICULA Ross<sup>29</sup>**

*Anabernicula* Ross, Trans. San Diego Soc. Nat. Hist., vol. 8, No. 15, Aug. 24, 1935, p. 107. Type, by monotypy, *Anabernicula gracilenta* Ross = *Branta minuscula* Wetmore.<sup>30</sup>

**Anabernicula minuscula (WETMORE)**

*Branta minuscula* WETMORE, Proc. U. S. Nat. Mus., vol. 64, art. 5, Jan. 15, 1924, p. 6, figs. 3-4.

Upper Pliocene (Blancan): Near Benson, Arizona (type locality). Late Pleistocene: Fossil Lake, Oregon; McKittrick, Kern County, and Rancho La Brea, Los Angeles, California. Quaternary: Smith Creek Cave, 34 miles north of Baker, White Pine County, Nevada.

**Genus PRESBYCHEN Wetmore**

*Presbychen* WETMORE, Proc. California Acad. Sci., ser. 4, vol. 19, No. 8, July 15, 1930, p. 92. Type, by original designation, *Presbychen abavus* Wetmore.

**Presbychen abavus WETMORE**

*Presbychen abavus* WETMORE, Proc. California Acad. Sci., ser. 4, vol. 19, No. 8, July 15, 1930, p. 92, figs. 5-7.

Miocene (Tremblor formation): Sharktooth Hill, Kern County, about 7 miles northeast of Bakersfield, California.

**Genus ANSER Brisson**

*Anser* BRISSON, Orn., 1760, vol. 1, p. 58; vol. 6, p. 261. Type, by tautonymy, *Anser domestica* Brisson = *Anas anser* Linnaeus.

<sup>28</sup> Status doubtful. Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, pp. 167-169, indicates that this may be a synonym of *Chen hyperborea*.

<sup>29</sup> Possibly representative of a distinct subfamily. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, pp. 172-173.

<sup>30</sup> See Howard, Condor, 1936, p. 35.

**Anser albifrons (SCOPOLI): White-fronted Goose**

*Branta albifrons* SCOPOLI, Annus I, Historico-Naturalis, 1769, p. 69.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; Rancho La Brea, Los Angeles, and San Pedro<sup>31</sup> (Palos Verdes sand), Los Angeles County, California.

**Genus CHEN Boie**

*Chen* BOIE, Isis von Oken, vol. 10, Heft 5, 1822, col. 563. Type, by monotypy, *Anser hyperboreus* Pallas.

**Chen hyperborea (PALLAS): Snow Goose**

*Anser hyperboreus* PALLAS, Spic. Zool., vol. 1, fasc. 6, 1769, p. 25.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; Rancho La Brea, Los Angeles, and McKittrick, California.<sup>32</sup>

**Chen rossii (CASSIN): Ross' Goose**

*Anser Rossii* "Baird," CASSIN, Proc. Acad. Nat. Sci. Philadelphia, vol. 13, sign. 5-6, March-April (June 30), 1861, p. 73.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.

**Chen pressa WETMORE<sup>33</sup>**

*Chen pressa* WETMORE, Smithsonian Misc. Coll., vol. 87, No. 20, Dec. 27, 1933, p. 9, figs. 5-8.

Upper Pliocene (Hagerman lake beds): Near Hagerman, Idaho.

**Subfamily DENDROCYGNINAE: TREEDUCKS****Genus DENDROCYGNA Swainson**

*Dendrocygna* SWAINSON, Class. Birds, vol. 2, July 1, 1837, p. 365. Type, by subsequent designation, *Anas arcuata* Horsfield (Gray, 1840).

**Dendrocygna evera WETMORE**

*Dendrocygna evera* WETMORE, Proc. U. S. Nat. Mus., vol. 64, art. 5, Jan. 15, 1924, p. 3, figs. 1-2.

Upper Pliocene (Blancan): Near Benson, Arizona.

<sup>31</sup> Specimen with size of the subspecies *frontalis*.

<sup>32</sup> *Chen caerulescens* recorded by Shufeldt, Bull. Amer. Mus. Nat. Hist., vol. 32, July 9, 1913, p. 145, on basis of scapula only, has been dropped. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 166?

<sup>33</sup> Miller, A. H., Univ. California Publ. Zool., vol. 42, No. 1, 1937, p. 41, suggests that this species may belong in the genus *Nesochen*.

Genus **DENDROCHEN** Miller

*Dendrochen* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 88. Type, by original designation, *Dendrochen robusta* Miller.

**Dendrochen robusta** MILLER

*Dendrochen robusta* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 88, fig. 3.

Lower Miocene (Rosebud formation): Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota.

## Subfamily ANATINAE: SURFACE-FEEDING DUCKS

Genus **ANAS** Linnaeus

*Anas* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 122. Type, by subsequent designation, *Anas boschas* Linnaeus = *A. platyrhynchos* Linnaeus (Lesson, 1828).

**Anas platyrhynchos** LINNAEUS: Mallard

*Anas platyrhynchos* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 125.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; Rancho La Brea, Los Angeles, McKittrick, and Carpinteria, California; (Palos Verdes sand): San Pedro, Los Angeles County, California; Baños de Ciego Montero, Santa Clara Province, Cuba. Pleistocene: Itchtucknee River, and Haile, Alachua County, Florida.

**Anas rubripes** BREWSTER: Black Duck

*Anas obscura rubripes* BREWSTER, Auk, vol. 19, No. 2, April 1902, p. 184.

Modern form reported from Pleistocene: Itchtucknee River, Florida.

**Anas fulvigula** RIDGWAY: Mottled Duck

*Anas obscura* var. *fulvigula* RIDGWAY, Amer. Nat., vol. 8, No. 2, February 1874, p. 111.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Itchtucknee River, and Bradenton, Florida.

**Anas strepera** LINNAEUS: Gadwall

*Anas strepera* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 125.

Modern form reported from late Pleistocene: McKittrick and Rancho La Brea, Los Angeles, California.<sup>34</sup>

<sup>34</sup> Listed erroneously in Check-list of North American Birds, ed. 4, 1931, p. 421, from Itchtucknee River, Florida.

**Anas acuta LINNAEUS: Pintail**

*Anas acuta* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 126.

Modern form reported from late Pleistocene: Fossil Lake, Oregon. (Vanhem formation, Jones fauna): Meade County, Kansas.

**Anas carolinensis GMELIN; Green-winged Teal<sup>35</sup>**

*Anas carolinensis* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 533.

Modern form reported from Pleistocene: Santa Rosa Island, California; Seminole Field, Pinellas County, Florida. Late Pleistocene: Fossil Lake, Oregon; Hawver Cave, Eldorado County, McKittrick, Kern County, Rancho La Brea, Los Angeles, and San Pedro, Los Angeles County, California; McPherson County, Kansas (Kentuck locality).

**Anas bimaculata (WETMORE)**

*Nettion bimaculata* WETMORE, Univ. Kansas Sci. Bull., vol. 30, pt. 1, No. 9, May 15, 1944, p. 92, figs. 1-3.

Upper Pliocene (Rexroad formation): Meade County, Kansas (type locality); 2 miles south of Benson, Arizona.

**Anas cyanoptera VIEILLOT: Cinnamon Teal**

*Anas cyanoptera* VIEILLOT, Nouv. Dict. Hist. Nat., nouv. éd., vol. 5, December 1816, p. 104.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; McKittrick, Kern County, California.

**Anas integra (MILLER).**

*Querquedula integra* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 90, fig. 4.

Lower Miocene (Rosebud formation), Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota.

**Genus MARECA Stephens**

*Mareca* STEPHENS, in Shaw, Gen. Zool., vol. 12, pt. 2, 1824, p. 130. Type, by subsequent designation, *Mareca fistularis* Stephens = *Anas penelope* Linnaeus (Eyton, 1838).

<sup>35</sup> There are also records for the Upper Miocene or lower Pliocene of Cedar Mountain, Nevada, by L. H. Miller, Univ. California Publ., Bull. Dept. Geol., vol. 9, Feb. 23, 1916, p. 173, and from the lower Pliocene of Hemphill County, Texas, by Compton, Condor, vol. 36, No. 1, January 1934, pp. 40-41, based on fragmentary material that is open to question as to specific identity.

**Mareca americana (GMELIN): American Widgeon**

*Anas americana* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 526.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; McKittrick, Kern County; San Pedro (Palos Verdes sand, lumberyard locality), Los Angeles County, California.

**Genus SPATULA Boie**

*Spatula* BOIE, Isis von Oken, vol. 10, Heft 5, 1822, col. 564. Type, by monotypy, *Anas clypeata* Linnaeus.

**Spatula clypeata (LINNAEUS): Shoveler**

*Anas clypeata* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 124.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; <sup>36</sup> McKittrick, Kern County, and San Pedro (Palos Verdes sand, lumberyard locality), Los Angeles County, California; Meade County (Vanhem formation, Jones fauna), Kansas.

**Subfamily AYTHYINAE: DIVING DUCKS <sup>37</sup>****Genus AYTHYA Boie**

*Aythya* BOIE, Tageb. Reise Norwegen, before May 1822, p. 351. Type, by monotypy, *Anas marila* Linnaeus.

**Aythya americana (EYTON): Redhead**

*Fuligula americana* EYTON, Mon. Anatidae, 1838, p. 155.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; McKittrick, California.

**Aythya collaris (DONOVAN): Ring-necked Duck**

*Anas collaris* DONOVAN, Brit. Birds, vol. 6, 1809, pl. 147.

Modern form reported from Lower Pliocene: Cedar Mountain, Nevada.

<sup>36</sup> Shufeldt's record of *Aix sponsa* from Fossil Lake is now assigned to *Spatula clypeata*. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 176.

<sup>37</sup> *Polysticta stelleri*, *Bucephala islandica*, and *Histrionicus histrionicus* reported from Fossil Lake by Shufeldt were wrongly identified and are eliminated from the list. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 176.

***Aythya valisineria* (WILSON): Canvasback**

*Anas valisineria* WILSON, Amer. Orn., vol. 8, 1814, p. 103, pl. 70, fig. 5.

Modern form reported from Pleistocene: Itchtucknee River, Florida.<sup>38</sup>

***Aythya affinis* (EYTON): Lesser Scaup**

*Fuligula affinis* EYTON, Mon. Anatidae, 1838, p. 157.

Modern form reported from Pleistocene: Melbourne (stratum 2), Itchtucknee River, Seminole Field, Pinellas County, Venice, and cave deposits near Lecanto, Florida. Late Pleistocene: Fossil Lake, Oregon.

**Genus *BUCEPHALA* Baird**

*Bucephala* BAIRD, in Baird, Cassin, and Lawrence, Rep. Expl. Surv. R. R. Pac., vol. 9, 1858, pp. xxiii, L, 787, 788, 795. Type, by original designation, *Anas albeola* Linnaeus.

***Bucephala albeola* (LINNAEUS): Bufflehead**

*Anas Albeola* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 124.

Modern form reported from Upper Pliocene (Rexroad formation): Meade County, Kansas. Pleistocene: Seminole Field, Pinellas County, Florida. Late Pleistocene: Fossil Lake, Oregon; McKittrick, Kern County, and San Pedro (Palos Verdes sand, lumberyard locality), Los Angeles County, California.

***Bucephala ossivallis* BRODKORB**

*Bucephala ossivallis* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 18, figs. 16, 17.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

**Genus *CLANGULA* Leach**

*Clangula* LEACH, in Ross, Voy. Discovery, 1819, app., p. xlvi. Type, by monotypy, *Clangula glacialis* Linnaeus = *Anas hyemalis* Linnaeus.

***Clangula hyemalis* (LINNAEUS): Oldsquaw**

*Anas hyemalis* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 126.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.

**Genus *MELANITTA* Boie**

*Melanitta* BOIE, Isis von Oken, vol. 10, Heft 5, 1822, col. 564. Type, by subsequent designation, *Anas fusca* Linnaeus (Eyton, 1838).

<sup>38</sup> Shufeldt's record for Fossil Lake, Oregon, refers to *Anas acuta*. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 174.

**Melanitta deglandi** (BONAPARTE) : White-winged Scoter

*Oedemia deglandi* BONAPARTE, Rev. Crit. Orn. Europe, 1850, p. 108.

Modern form reported from late Pleistocene (Palos Verdes sand) : San Pedro, Los Angeles County, California.

**Melanitta perspicillata** (LINNAEUS) : Surf Scoter

*Anas perspicillata* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 125.

Modern form reported from late Pleistocene : Fossil Lake, Oregon ; San Pedro (Palos Verdes sand), Los Angeles County, California.

#### Genus CHENDYTES Miller

*Chendytes* L. H. MILLER, Condor, vol. 27, No. 4, July 15, 1925, p. 145. Type, by monotypy, *Chendytes lawi* Miller.

**Chendytes lawi** MILLER

*Chendytes lawi* L. H. MILLER, Condor, vol. 27, No. 4, July 15, 1925, p. 145, fig. 40.

Early Pleistocene : Sexton Canyon, near Lake Canyon, Ventura County. Late Pleistocene : Newport Bay, Orange County ; Lomita, Playa del Rey, Santa Monica (type locality), San Pedro (lumberyard locality), Vermont and Sepulveda Boulevard, Bixby Slough near Hermosa Beach, and Palos Verdes, Los Angeles County, California.

**Chendytes milleri** HOWARD

*Chendytes milleri* H. HOWARD, Condor, vol. 57, No. 3, May 25, 1955, p. 137, fig. 1 a, d, e, f, g, i, fig. 2 b, c, fig. 3.

Early Pleistocene : San Nicolás Island, California.

#### Subfamily OXYURINAE: RUDDY and MASKED DUCKS

##### Genus OXYURA Bonaparte

*Oxyura* BONAPARTE, Ann. Lyc. Nat. Hist. New York, vol. 2, 1828, p. 390. Type, by monotypy, *Anas rubidus* Wilson.

**Oxyura jamaicensis** (GMELIN) : Ruddy Duck

*Anas jamaicensis* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 519.

Modern form reported from Pleistocene : Venice, Florida. Late Pleistocene : Fossil Lake, Oregon ; McKittrick, Kern County, and near Manix, San Bernardino County, California.

#### Subfamily EONESSINAЕ: EONESSA

##### Genus EONESSA Wetmore

*Eonessa* WETMORE, Journ. Pal., vol. 12, No. 3, May 1938, p. 280. Type, by original designation, *Eonessa anaticula* Wetmore.

**Eonessa anaticula WETMORE**

*Eonessa anaticula* WETMORE, Journ. Pal., vol. 12, No. 3, May 1938, p. 280, figs. 1-5.

Eocene (Uinta C horizon): Myton Pocket, Utah.

**Subfamily MERGINAE: MERGANSERS****Genus LOPHODYTES Reichenbach**

*Lophodytes* REICHENBACH, Avium Syst. Nat., 1852 (1853), p. ix. Type, by original designation, *Mergus cucullatus* Linnaeus.

**Lophodytes cucullatus (LINNAEUS): Hooded Merganser<sup>39</sup>**

*Mergus cucullatus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 120.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Venice, and Itchtucknee River, Florida; Nye Sink, Beaver County, Oklahoma. Late Pleistocene: McPherson County (Kentuck locality), Kansas.

**Lophodytes floridana (SHUFELDT)<sup>40</sup>**

*Querquedula floridana* SHUFELDT, 9th Ann. Rep. Florida State Geol. Surv., 1917, p. 36, pl. 1, fig. 4, pl. 2, fig. 25.

Pleistocene: Vero (stratum 2, type locality), Melbourne, and Itchtucknee River, Florida.

**Genus MERGUS Linnaeus**

*Mergus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 129. Type, by subsequent designation, *Mergus castor* Linnaeus = *Mergus merganser* Linnaeus (Gray, 1840).

**Mergus merganser LINNAEUS: Merganser**

*Mergus Merganser* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 129.

Modern form reported from Pleistocene: North Shore Channel, Chicago, Illinois.<sup>41</sup> Late Pleistocene: Fossil Lake, Oregon.

**Mergus serrator LINNAEUS: Red-breasted Merganser**

*Mergus Serrator* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 129.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.

<sup>39</sup> Shufeldt's record from Fossil Lake, Oregon, is based on an erroneous identification. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 176.

<sup>40</sup> See Wetmore, Condor, vol. 57, No. 3, 1955, p. 189.

<sup>41</sup> Formerly recorded as *Mergus serrator*; see Wetmore, Wilson Bull., 1948, p. 240.

Order FALCONIFORMES: VULTURES, HAWKS, and FALCONS

Suborder CATHARTAE: NEW WORLD VULTURES

Superfamily NEOCATHARTOIDEA: NEOCATHARTES

Family NEOCATHARTIDAE: NEOCATHARTES

Genus NEOCATHARTES Wetmore

*Neocathartes* WETMORE, Auk, vol. 67, No. 2, April 1950, p. 235. Type, by original designation, *Eocathartes grallator* Wetmore.

**Neocathartes grallator (WETMORE)**

*Eocathartes grallator* WETMORE, Ann. Carnegie Mus., vol. 30, May 24, 1944, p. 58, pls. 1-5, figs. 1-10.

Upper Eocene (Upper Washakie beds): Sand wash one-half mile north of Dobe Town Road crossing, Sweetwater County, Wyoming.

Superfamily CATHARTOIDEA: NEW WORLD VULTURES

Family CATHARTIDAE: NEW WORLD VULTURES

Genus CATHARTES Illiger

*Cathartes* ILLIGER, Prodromus, 1811, p. 236. Type, by subsequent designation, *Vultur aura* Linnaeus (Vigors, 1825).

**Cathartes aura (LINNAEUS): Turkey Vulture<sup>42</sup>**

*Vultur aura* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 86.

Modern form reported from Pleistocene: Seminole Field, Pinellas County,<sup>43</sup> Melbourne, and cavern deposits near Lecanto, Florida. Late Pleistocene: Potter Creek and Samwel caves, Shasta County, Hawver Cave, Eldorado County, Carpinteria, Santa Barbara County, McKittrick, Kern County, Rancho La Brea, Los Angeles, and San Pedro (Palos Verdes sand, lumberyard locality), Los Angeles County, California.

Genus CORAGYPS Geoffroy

*Coragyps* GEOFFROY Ms in Le Maout, Hist. Nat. Oiseaux, 1853, p. 66. Type, by monotypy, *Vultur urubu* Vieillot = *Vultur atratus* Bechstein.

<sup>42</sup> Wetmore, Smithsonian Misc. Coll., vol. 85, No. 2, Apr. 13, 1931, pp. 4, 6, 7, 23-24, has recorded the small Mexican turkey vulture, *Cathartes aura aura*, from Seminole Field, Pinellas County, Florida. Other reports of this species are mainly of the larger type, of which two races, *septentrionalis* and *teter*, are at present recognized in the United States.

<sup>43</sup> Recorded from Vero, stratum 2, erroneously by Shufeldt, 9th Ann. Rep. Florida State Geol. Surv., 1917, p. 36. The record from Vero (stratum 3) is of Recent age according to Cooke, Florida Geol. Surv. Bull. 29, 1945, pp. 306-307.

**Coragyps atratus (BECUSTEIN): Black Vulture**

*Vultur atratus* BECUSTEIN, in John Latham's allg. Uebers Vogel, Bd. 1, Anh., 1793, p. 655.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, and cavern deposits near Lecanto, Florida. Quaternary (probably Recent): Rocky Arroyo, New Mexico.

**Coragyps occidentalis (MILLER)<sup>44</sup>**

*Catharista occidentalis* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 5, No. 21, Sept. 10, 1909, p. 306.

Pleistocene: San Josecito Cavern, Aramberri, Nuevo León.<sup>45</sup> Late Pleistocene: Potter Creek and Samwel caves, Shasta County; Carpinteria, Santa Barbara County; McKittrick, Kern County; and Rancho La Brea, Los Angeles, California.

**Genus PHASMAGYPS Wetmore**

*Phasmagyps* WETMORE, Proc. Colorado Mus. Nat. Hist., vol. 7, No. 2, July 15, 1927, p. 3. Type, by monotypy, *Phasmagyps patritus* Wetmore.

**Phasmagyps patritus WETMORE**

*Phasmagyps patritus* WETMORE, Proc. Colorado Mus. Nat. Hist., vol. 7, No. 2, July 15, 1927, p. 3, figs. 1-4.

Lower Oligocene (Chadron formation): Horsetail Creek, Weld County, Colorado.

**Genus PALAEOGYPS Wetmore**

*Palaeogyps* WETMORE, Proc. Colorado Mus. Nat. Hist., vol. 7, No. 2, July 15, 1927, p. 5. Type, by monotypy, *Palaeogyps prodromus* Wetmore.

**Palaeogyps prodromus WETMORE**

*Palaeogyps prodromus* WETMORE, Proc. Colorado Mus. Nat. Hist., vol. 7, No. 2, July 15, 1927, p. 5, figs. 5-14.

Lower Oligocene (Chadron formation): Horsetail Creek, Weld County, Colorado.

<sup>44</sup> *Coragyps shastensis* (Miller) is a synonym according to Miller, Condor, 1941, pp. 140-141.

<sup>45</sup> Recorded also from deposits that may be late Pleistocene or early Recent in Pit 10 at Rancho La Brea (Howard, H., and Miller, A. H., Carnegie Inst. Washington Publ. 514, 1939, p. 43), Conkling Cavern, Pyramid Peak, Organ Mountains, Dona Ana County, New Mexico (Howard, H., and Miller, A. H., Condor, vol. 35, Jan. 15, 1933, pp. 15, 17), and from Smith Creek Cave, 34 miles north of Baker, White Pine County, Nevada (Howard, H., Condor, vol. 37, July 15, 1935, pp. 206-207).

Genus **GYMNOGYPS** Lesson

*Gymnogyps* LESSON, Echo du Monde Savant, ser. 2, vol. 6, Dec. 8, 1842, col. 1037. Type, by monotypy, *Vultur californianus* Shaw.

Genus **Gymnogyps** amplus MILLER<sup>46</sup>

*Gymnogyps amplus* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 16, Oct. 28, 1911, p. 390, fig. 2.

Pleistocene: Sarasota and Seminole Field, Pinellas County, Florida; San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Samwel Cave (type locality) and Stone Man Cave, Shasta County; Carpinteria, McKittrick, and Rancho La Brea, Los Angeles, California. Quaternary (probably Recent): Rocky Arroyo, New Mexico.

Genus **BREAGYPS** Miller and Howard

*Breagyps* L. H. MILLER and H. HOWARD, Publ. Univ. California at Los Angeles, Biol. Sci., vol. 9, Feb. 18, 1938, p. 171. Type, by original designation, *Vultur clarki* Miller = *Sarcorhamphus clarki* Miller.

Genus **Breagyps** clarki (MILLER)

*Sarcorhamphus clarki* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 1, Nov. 28, 1910, p. 11, figs. 3a, 3b.

Late Pleistocene: Rancho La Brea, Los Angeles, California. Quaternary (probably late Pleistocene): Smith Creek Cave, 34 miles north of Baker, White Pine County, Nevada.

Genus **SARCORAMPHUS** Duméril

*Sarcoramphus* DUMÉRIL, Zoöl. Anal., 1806, p. 32. Type, by subsequent designation, *Vultur papa* Linnaeus (Vigors, 1825).

Genus **Sarcoramphus** kernense (MILLER)

*Vultur kernensis* L. H. MILLER, Condor, vol. 33, Mar. 18, 1931, p. 70, fig. 16. Pliocene: Pozo Creek, Kern River Divide, Kern County, about 9 miles northeast of Bakersfield, California.

Family **TERATORNITHIDAE: TERATORNITHES**Genus **TERATORNIS** Miller

*Teratornis*, L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 5, No. 21, Sept. 10, 1909, p. 307. Type, by monotypy, *Teratornis merriami* Miller.

<sup>46</sup> Fisher, Pacific Science, vol. 1, No. 4, October 1947, p. 227, finds that all fossil material from western North America formerly placed under the living *Gymnogyps californianus* is properly assigned to the present bird, which is so slightly differentiated as to be considered the direct Pleistocene progenitor of the modern form. The remaining records, from Florida and Nuevo León, are placed under *amplus* on the basis of probability.

**Teratornis merriami MILLER**

*Teratornis merriami* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 5, No. 21, Sept. 10, 1909, p. 307, text figs. 1-9.

Pleistocene: Seminole Field, Pinellas County, and Bradenton, Florida; San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Rancho La Brea (type locality),<sup>47</sup> Los Angeles, McKittrick, Kern County, and Carpinteria, Santa Barbara County, California.

**Teratornis incredibilis HOWARD**

*Teratornis incredibilis* HOWARD, Bull. Southern California Acad. Sci., vol. 51, pt. 2, 1952, p. 51, pl. 10, figs. 1-2.

Quaternary (probably late Pleistocene): Smith Creek Cave, 34 miles north of Baker, White Pine County, Nevada.

**Genus CATHARTORNIS Miller<sup>48</sup>**

*Cathartornis* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 1, Nov. 28, 1910, p. 14. Type, by monotypy, *Cathartornis gracilis* Miller.

**Cathartornis gracilis MILLER**

*Cathartornis gracilis* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 1, Nov. 28, 1910, p. 14, figs. 4a, 4b.

Late Pleistocene: Rancho La Brea, Los Angeles, California.

Suborder FALCONES: SECRETARY-BIRDS, HAWKS, and FALCONS

Superfamily FALCONOIDEA: HAWKS, FALCONS, and ALLIES

Family ACCIPITRIDAE: HAWKS, OLD WORLD VULTURES, and HARRIERS

Subfamily AEGYPIINAE: OLD WORLD VULTURES

**Genus PALAEOBORUS Coues**

*Palacoborus* COUES, Key North Amer. Birds, ed. 2, 1884, p. 822. Type, by original designation, *Cathartes umbrosus* Cope.

**Palaeoborus umbrosus (COPE)<sup>49</sup>**

*Cathartes umbrosus* COPE, Proc. Acad. Nat. Sci. Philadelphia, vol. 26, Oct. 20, 1874, p. 151.

Pliocene: North of Pojauque, New Mexico.

<sup>47</sup> Recorded also from early Recent deposits in Pit 10, at Rancho La Brea (Howard, H., and Miller, A. H., Carnegie Inst. Washington Publ. 514, 1939, p. 43).

<sup>48</sup> Allocated to Teratornithidae by Miller, L. H., and Howard, H., Publ. Univ. California at Los Angeles, Biol. Sci., vol. 9, Feb. 18, 1938, pp. 169-170, 173.

<sup>49</sup> Placed in Aegypiinae by Howard, Carnegie Inst. Washington Publ. 349, 1932, pp. 45, 70-73, 75, 76.

**Palaeoborus howardae WETMORE**

*Palaeoborus howardae* WETMORE, Proc. U. S. Nat. Mus., vol. 84, No. 3, 1936, p. 73, fig. 13.

Miocene: Dawes County, Nebraska.

**Palaeoborus rosatus MILLER and COMPTON**

*Palaeoborus rosatus* A. H. MILLER and L. V. COMPTON, Condor, vol. 41, No. 4, July 15, 1939, p. 156, fig. 34B.

Lower Miocene (Rosebud formation): Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota.

**Genus NEOGYPS Miller**

*Neogyps* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 9, No. 9, Mar. 10, 1916, p. 108. Type, by monotypy, *Neogyps errans* Miller.

**Neogyps errans MILLER**

*Neogyps errans* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 9, No. 9, Mar. 10, 1916, p. 108, fig. 2.

Late Pleistocene: Rancho La Brea (type locality),<sup>50</sup> Los Angeles, Carpinteria, Santa Barbara County, and McKittrick, Kern County, California; San Josecito Cave, Aramberri, Nuevo León. Quaternary: Smith Creek Cave, 34 miles north of Baker, White Pine County, Nevada.

**Genus NEOPHRONTOPS Miller**

*Neophrontops* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 9, No. 9, Mar. 10, 1916, p. 106. Type, by monotypy, *Neophrontops americanus* Miller.

**Neophrontops americanus MILLER**

*Neophrontops americanus* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 9, No. 9, Mar. 10, 1916, p. 106, fig. 1.

Late Pleistocene: Rancho La Brea (type locality),<sup>51</sup> Los Angeles, Carpinteria, and McKittrick, California; San Josecito Cave, Aramberri, Nuevo León.

**Neophrontops dakotensis COMPTON**

*Neophrontops dakotensis* COMPTON, Amer. Journ. Sci., ser. 5, vol. 30, October 1935, p. 344, fig. 1.

Lower Pliocene: Big Spring Canyon, 15 miles southwest of Martin, Bennett County, South Dakota.

<sup>50</sup> Recorded also from early Recent deposits in Pit 10 at this site (Howard, H., and Miller, A. H., Carnegie Inst. Washington Publ. 514, 1939, p. 43).

<sup>51</sup> Recorded also from early Recent deposits in Pit 10 at this site (Howard, H., and Miller, A. H., Carnegie Inst. Washington Publ. 514, 1939, p. 43).

**Neophrontops vetustus WETMORE**

*Neophrontops vetustus* WETMORE, Condor, vol. 45, No. 6, Dec. 8, 1943, p. 229, fig. 62.

Middle Miocene (Sheep Creek beds): Stonehouse Draw Quarry, Sioux County, Nebraska.

**Subfamily ELANINAE: WHITE-TAILED KITES****Genus ELANUS Savigny**

*Elanus* SAVIGNY, Descr. Égypte, vol. 1, 1809, pp. 69, 97. Type, by monotypy, *Elanus caesius* Savigny = *Falco caeruleus* Desfontaines.

***Elanus leucurus* (VIEILLOT): White-tailed Kite**

*Milvus leucurus* VIEILLOT, Nouv. Dict. Hist. Nat., nouv. éd., vol. 20, May 1818, p. 563 [erreore = 556].

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Rancho La Brea, Los Angeles, California.

**Subfamily MILVINAE: TRUE KITES****Genus PROICTINIA Shufeldt**

*Proictinia* SHUFELDT, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, Aug. 4, 1913, p. 301. Type, by monotypy, *Proictinia gilmorei* Shufeldt.

***Proictinia effera* WETMORE**

*Proictinia effera* WETMORE, Bull. Amer. Mus. Nat. Hist., vol. 48, art. 12, Dec. 3, 1923, p. 504, figs. 19-20.

Lower Miocene (Lower Harrison beds): Agate Fossil Quarry, Sioux County, Nebraska.

***Proictinia gilmorei* SHUFELDT**

*Proictinia gilmorei* SHUFELDT, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, Aug. 4, 1913, p. 301, pl. 55, fig. 27.

Lower Pliocene (Ogallala formation): Long Island, Phillips County, Kansas.

**Subfamily ACCIPITRINAE: BIRD HAWKS****Genus ACCIPITER Brisson**

*Accipiter* BRISSON, Orn., 1760, vol. 1, p. 28; vol. 6, p. 310. Type, by tautonymy, *Accipiter* Brisson = *Falco nisus* Linnaeus.

**Accipiter gentilis (LINNAEUS): Goshawk**

*Falco gentilis* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 89.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

**Accipiter striatus velox (WILSON): Sharp-shinned Hawk**

*Falco velox* WILSON, Amer. Orn., vol. 5, 1812, p. 116, pl. 45, fig. 1.

Modern form reported from late Pleistocene: Samwel Cave, Shasta County, Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

**Accipiter cooperii (BONAPARTE): Cooper's Hawk**

*Falco Cooperii* BONAPARTE, Amer. Orn., vol. 2, 1828, p. 1, pl. 10, fig. 1.

Modern form reported from late Pleistocene: McKittrick, Kern County, Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

## Subfamily BUTEONINAE: BUZZARDS and EAGLES

## Genus BUTEO Lacépède

*Buteo* LACÉPÈDE, Tabl. Ois., 1799, p. 4. Type, by tautonymy, *Falco buteo* LINNAEUS.

**Buteo jamaicensis (GMELIN): Red-tailed Hawk**

*Falco jamaicensis* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 266.

Modern form reported from late Pleistocene: Potter Creek Cave, Shasta County, McKittrick, Carpinteria, and Rancho La Brea, Los Angeles, California. Pleistocene: Seminole Field, Pinellas County, Venice, and Melbourne (stratum 2), Florida.

**Buteo lineatus (GMELIN): Red-shouldered Hawk**

*Falco lineatus* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 268.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Venice, and Melbourne, Florida. Late Pleistocene: Carpinteria, Santa Barbara County, California.

**Buteo platypterus (VIEILLOT): Broad-winged Hawk**

*Sparvius platypterus* VIEILLOT, Tabl. Encycl. Méth. Orn., vol. 3, 1823, p. 1273.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

**Buteo swainsoni** BONAPARTE: Swainson's Hawk

*Buteo swainsoni* BONAPARTE, Geogr. and Comp. List, 1838, p. 3.

Modern form reported from late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

**Buteo lagopus** (PONTOPPIDAN): Rough-legged Hawk

*Falco lagopus* PONTOPPIDAN, Danske Atlas, 1763, p. 616.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Buteo regalis** (GRAY): Ferruginous Hawk

*Archibuteo regalis* G. R. GRAY, Genera of Birds, vol. 1, pt. 1, May 1844, pl. 6.

Modern form reported from late Pleistocene: Hawver Cave, El Dorado County, Rancho La Brea, Los Angeles, Carpinteria, Santa Barbara County, and McKittrick, Kern County, California.

**Buteo fuscescens** (VIEILLOT): Buzzard Eagle

*Spizaëtus fuscescens* VIEILLOT, Nouv. Dict. Hist. Nat., nouv. éd., vol. 32, September 1819, p. 55.

Modern form<sup>52</sup> reported from late Pleistocene: Baños de Ciego Montero, Santa Clara Province, Cuba.

**Buteo antecursor** WETMORE

*Buteo antecursor* WETMORE, Bull. Mus. Comp. Zoöl., vol. 75, October 1933, p. 298, figs. 1-5.

Oligocene (Brule formation): Near Torrington, Goshen County, Wyoming.

**Buteo grangeri** WETMORE and CASE

*Buteo grangeri* WETMORE and CASE, Contr. Mus. Pal. Univ. Michigan, vol. 4, No. 8, Jan. 15, 1934, p. 129, 1 pl.

Middle Oligocene (Brule formation, Oreodon beds): Big Badlands of Pass Creek, Washabaugh County, South Dakota.

**Buteo fluviaticus** MILLER and SIBLEY

*Buteo fluviaticus* A. H. MILLER and C. G. SIBLEY, Condor, vol. 44, No. 1, Jan. 15, 1942, p. 39, fig. 12.

Middle Oligocene (Brule formation, Oreodon beds): Owl Creek, 6 miles east of Carr, Weld County, Colorado.

<sup>52</sup> Formerly called *Buteo melanoleucus* (Vieillot). The modern range extends from the mountains of Venezuela and Colombia, south through Ecuador and Perú to Chile, and from southeastern Brazil and Paraguay to Tierra del Fuego.

**Buteo typhoicus WETMORE**

*Butco typhoicus* WETMORE, Bull. Amer. Mus. Nat. Hist., vol. 48, art. 12, Dec. 3, 1923, p. 489, figs. 3-5.

Lower Miocene (Lower Harrison beds); Upper Miocene<sup>53</sup> (Lower Snake Creek beds, type locality): south of Agate, Sioux County, Nebraska.

**Buteo ales (WETMORE)**

*Geranoaëtus ales* WETMORE, Ann. Carnegie Mus., vol. 16, No. 4, Apr. 10, 1926, p. 403, pl. 38, figs. 1-5.

Lower Miocene (Lower Harrison beds): Quarry No. 2, Agate Springs Fossil Quarries, Sioux County, Nebraska.

**Buteo contortus (WETMORE)**

*Geranoaëtus contortus* WETMORE, Bull. Amer. Mus. Nat. Hist., vol. 48, art. 12, Dec. 3, 1923, p. 492, figs. 6-9.

Upper Miocene<sup>53</sup> (Lower Snake Creek beds): Sinclair Draw (type locality) and Olcott Hill, Sioux County, Nebraska.

**Buteo dananus (MARSH)**

*Aquila danana* MARSH, Amer. Journ. Sci., ser. 3, vol. 2, August 1871, p. 125.

Lower Pliocene (Upper Snake Creek beds): Loup Fork River, Nebraska.

**Buteo conterminus (WETMORE)**

*Geranoaëtus conterminus* WETMORE, Bull. Amer. Mus. Nat. Hist., vol. 48, art. 12, Dec. 3, 1923, p. 497, figs. 11-13.

Lower Pliocene (Upper Snake Creek beds): 20 miles south of Agate, Sioux County, Nebraska.

### Genus PARABUTEO Ridgway

*Parabuteo* RIDGWAY, in Baird, Brewer, and Ridgway, Hist. North Amer. Birds, vol. 3, 1874, p. 250. Type, by monotypy, *Butco harrisi* Audubon.

**Parabuteo unicinctus (TEMMINCK): Harris' Hawk**

*Falco unicinctus* TEMMINCK, Planch. Col. Ois., livr. 53, Dec. 25, 1824, pl. 313.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

<sup>53</sup> Possibly early Pliocene; cf. Cook, H. J., and Cook, M. C., Nebraska Geol. Surv., Paper No. 5, 1933, p. 42.

**Genus CALOHIERAX Wetmore**

*Calohierax* WETMORE, Bull. Mus. Comp. Zoöl., vol. 80, No. 12, October 1937, p. 428. Type, by original designation, *Calohierax quadratus* Wetmore.

**Calohierax quadratus WETMORE**

*Calohierax quadratus* WETMORE, Bull. Mus. Comp. Zoöl., vol. 80, No. 12, October 1937, p. 429, figs. 1-3.

Recent (extinct):<sup>54</sup> Cave deposits on Great Exuma Island, Bahamas Islands.

**Genus MIOHIERAX Howard**

*Miohierax* HOWARD, Condor, vol. 46, No. 5, Sept. 27, 1944, p. 236. Type, by original designation, *Miohierax stocki* Howard.

**Miohierax stocki HOWARD**

*Miohierax stocki* HOWARD, Condor, vol. 46, No. 5, Sept. 27, 1944, p. 236, fig. 40.

Late Lower Miocene (Tick Canyon formation): Near head of Vasquez Canyon, Los Angeles County, California.

**Genus HYPOMORPHNUS Cabanis<sup>55</sup>**

*Hypomorphnus* CABANIS, Arch. Naturg., vol. 10, Bd. 1, 1844, p. 263. Type, by original designation, *Falco urubitinga* Linnaeus.

**Hypomorphnus enectus (WETMORE)**

*Urubitinga enecta* WETMORE, Bull. Amer. Mus. Nat. Hist., vol. 48, art. 12, Dec. 3, 1923, p. 500, figs. 14-18.

Middle Miocene (Lower Sheep Creek beds): 20 miles south of Agate, Sioux County, Nebraska.

**Hypomorphnus sodalis (SHUFELDT)<sup>56</sup>**

*Aquila sodalis* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891, p. 821.

Late Pleistocene: Fossil Lake, Oregon.

**Genus TITANOHIERAX Wetmore**

*Titanohierax* WETMORE, Bull. Mus. Comp. Zoöl., vol. 80, No. 12, October 1937, p. 430. Type, by original designation, *Titanohierax gloveralleni* Wetmore.

<sup>54</sup> Included here since it has not been found in living form, being known only from its bones.

<sup>55</sup> For the use of *Hypomorphnus* to replace *Urubitinga* see Peters, Check-list of the birds of the world, vol. 1, 1931, p. 244.

<sup>56</sup> Generic allocation questionable. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, pp. 177-178.

***Titanohierax* *gloveralleni* WETMORE**

*Titanohierax* *gloveralleni* WETMORE, Bull. Mus. Comp. Zoöl., vol. 80, No. 12, October 1937, p. 431, figs. 4-9.

Recent (extinct):<sup>57</sup> Cave deposits on Great Exuma Island, Bahama Islands.

**Genus BUTEOGALLUS Lesson**

*Buteogallus* LESSON, Traité d'Orn., livr. 2, 1830, p. 83. Type, by monotypy, *Buteogallus cathartoides* Lesson = *Falco aequinoctialis* Gmelin.

***Buteogallus* *milleri* (HOWARD)<sup>58</sup>**

*Urubitinga milleri* HOWARD, Carnegie Inst. Washington Publ. 429, October 1932, p. 25, pl. 2, figs. 3-3a, pl. 3, fig. 2.

Late Pleistocene: Hawver Cave, Eldorado County, California.

***Buteogallus* *fragilis* (MILLER)<sup>58</sup>**

*Cranoaëtus* *fragilis* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 12, Oct. 9, 1911, p. 315, figs. 5a, 5b.

Late Pleistocene: McKittrick, Kern County, Rancho La Brea (type locality),<sup>59</sup> Los Angeles, and Carpinteria, Santa Barbara County, California.

**Genus WETMOREGYPS Miller**

*Wetmoregyps* L. H. MILLER, Condor, vol. 30, No. 4, July 16, 1928, p. 255. Type, by original designation, *Morphnus daggetti* Miller.

***Wetmoregyps* *daggetti* (MILLER)**

*Morphnus daggetti* L. H. MILLER, Condor, vol. 17, No. 5, Oct. 10, 1915, p. 179, fig. 63.

Pleistocene: San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Rancho La Brea (type locality), Los Angeles, and Carpinteria, Santa Barbara County, California.

**Genus MORPHNUS Dumont**

*Morphnus* DUMONT, Dict. Sci. Nat., vol. 1, Suppl., October 1816, p. 88. Type, by subsequent designation, *Falco guianensis* Daudin (Chubb, 1916).

<sup>57</sup> Included here since it has not been found in living form, being known only from its bones.

<sup>58</sup> Referred to this genus by Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 177.

<sup>59</sup> Recorded also from early Recent deposits in Pit 10 at Rancho La Brea (Howard, H., and Miller, A. H., Carnegie Inst. Washington Publ. 514, 1939, p. 43). And from late Pleistocene or early Recent deposits in Shelter Cave, Pyramid Peak, Organ Mountains, Dona Ana County, New Mexico, by Howard, H., and Miller, A. H., Condor, vol. 35, 1933, pp. 16, 17.

***Morphnus woodwardi* MILLER**

*Morphnus woodwardi* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 12, Oct. 9, 1911, p. 312, figs. 3a, 3b.

Late Pleistocene: Rancho La Brea, Los Angeles, California.<sup>60</sup>

**Genus *SPIZAËTUS* Vieillot**

*Spizaëtus* VIEILLOT, Analyse, 1816, p. 24. Type, by subsequent designation, *Falco ornatus* Daudin (Gray, 1840).

***Spizaëtus grinnelli* (MILLER)<sup>61</sup>**

*Geranoaëtus grinnelli* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 12, Oct. 9, 1911, p. 314, figs. 4a, 4b.

Pleistocene: San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Rancho La Brea (type locality),<sup>62</sup> Los Angeles, McKittrick and Carpinteria, California.

***Spizaëtus willetti* HOWARD**

*Spizaëtus willetti* HOWARD, Condor, vol. 37, No. 4, July 15, 1935, p. 207, fig. 40.

Quaternary (probably late Pleistocene): Smith Creek Cave, 34 miles north of Baker, White Pine County, Nevada.

***Spizaëtus pliogryps* (SHUFELDT)**

*Aquila pliogryps* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891, p. 821.

Late Pleistocene: Fossil Lake, Oregon.

**Genus *PALAEASTUR* Wetmore**

*Palaeastur* WETMORE, Condor, vol. 45, No. 6, Dec. 8, 1943, p. 230. Type, by original designation, *Palaeastur atavus* Wetmore.

***Palaeastur atavus* WETMORE**

*Palaeastur atavus* WETMORE, Condor, vol. 45, No. 6, Dec. 8, 1943, p. 230, fig. 63.

Lower Miocene (Lower Harrison beds); Stenomylus Quarry, about 2 miles southeast of Agate Springs fossil site, near Agate, Nebraska.

<sup>60</sup> Recorded also from early Recent deposits in Pit 10 at this site (Howard, H., and Miller, A. H., Carnegie Inst. Washington Publ. 514, 1939, p. 43).

<sup>61</sup> Allocated in *Spizaëtus* by Howard, Carnegie Inst. Washington Publ. 429, 1932, pp. 33-44.

<sup>62</sup> Placed in *Spizaëtus* by Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, pp. 176-177.

Genus **AQUILA** Brisson<sup>63</sup>

*Aquila* BRISSON, Orn., 1760, vol. 1, pp. 28, 419. Type, by tautonymy, *Aquila* Brisson = *Falco chrysaëtus* Linnaeus.

**Aquila chrysaëtus (LINNAEUS): Golden Eagle**

*Falco Chrysaëtus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 88.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Fossil Lake, Oregon; Rancho La Brea,<sup>64</sup> Los Angeles, Carpinteria, McKittrick, and near Manix, San Bernardino County, California.

Genus **HALIAEETUS** Savigny

*Haliaeetus* SAVIGNY, Descr. Égypte, Ois., vol. 1, 1809, pp. 68, 85. Type, by monotypy, *Haliaeetus nisus* Savigny = *Falco albicilla* Linnaeus.

**Haliaeetus leucocephalus (LINNAEUS): Bald Eagle**

*Falco leucocephalus* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 124.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Venice, Melbourne, and cavern deposits near Lecanto, Florida; Niobrara River, near Peters, Sheridan County, Nebraska. Late Pleistocene: Fossil Lake, Oregon; Carpinteria, McKittrick, Rancho La Brea, Los Angeles, and San Pedro (Palos Verdes sand), Los Angeles County, California.

## Subfamily PALAEOPLANCINAE: PALAEOPLANCUS

Genus **PALAEOPLANCUS** Wetmore

*Palaeoplancus* WETMORE, Smithsonian Misc. Coll., vol. 87, No. 19, Dec. 26, 1933, p. 1. Type, by original designation, *Palaeoplancus sternbergi* Wetmore.

**Palaeoplancus sternbergi** WETMORE

*Palaeoplancus sternbergi* WETMORE, Smithsonian Misc. Coll., vol. 87, No. 19, Dec. 26, 1933, p. 12, figs. 1-19.

Middle Oligocene (Brule formation, Upper Oreodon beds): East side of Plum Creek, Niobrara County, Wyoming.

<sup>63</sup> *Aquila ferox* Shufeldt proves to be a mammal. See Wetmore, Amer. Mus. Nov., No. 680, Dec. 4, 1933, pp. 1-2.

<sup>64</sup> Howard, Auk, vol. 64, April 1947, pp. 287-291, finds that the abundant material from Rancho La Brea indicates a bird with longer wing, shorter leg, and larger skull than the living population.

## Subfamily CIRCINAE: HARRIERS

Genus *CIRCUS* Lacépède

*Circus* LACÉPÈDE, Tabl. Ois., 1799, p. 4. Type, by subsequent designation, *Falco aeruginosus* Linnaeus (Lesson, 1828).

*Circus cyaneus* (LINNAEUS): Marsh Hawk

*Falco cyaneus* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 126.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Fossil Lake, Oregon; McKittrick, and Rancho La Brea, Los Angeles, California.

## Family PANDIONIDAE: OSPREYS

Genus *PANDION* Savigny

*Pandion* SAVIGNY, Descr. Égypte, Ois., vol. 1, 1809, pp. 69, 96. Type, by monotypy, *Pandion fluvialis* Savigny = *Falco haliactus* Linnaeus.

*Pandion haliaetus* LINNAEUS: Osprey

*Falco Haliactus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 91.

Modern form reported from Pleistocene: Melbourne (stratum 2), and Itchtucknee River, Florida.

## Family FALCONIDAE: CARACARAS and FALCONS

## Subfamily CARACARINAE: CARACARAS

Genus *CARACARA* Merrem

*Caracara* MERREM, in Ersch and Gruber, Allg. Encycl. Wiss. Künste, vol. 15, 1826, p. 159. Type, by subsequent designation, *Falco plancus* Miller (Hellmayr and Conover, 1949).

*Caracara prelutosus* prelutosus (HOWARD)

*Polyborus prelutosus* HOWARD, Carnegie Inst. Washington Publ. 487, July 7, 1938, p. 226, pls. 1-3.

Pleistocene: Seminole Field, Pinellas County, and Melbourne, Florida. Late Pleistocene: McKittrick, Kern County; Carpinteria, Santa Barbara County; and Rancho La Brea (type locality), Los Angeles, California.<sup>65</sup>

<sup>65</sup> Recorded also from early Recent deposits at this site (Howard, H., and Miller, A. H., Carnegie Inst. Washington Publ. 514, 1939, p. 43) and from Quaternary deposits in Conkling Cavern, Organ Mountains, New Mexico.

**Caracara prelutosus grinnelli (HOWARD)**

*Polyborus prelutosus grinnelli* HOWARD, Condor, vol. 42, No. 1, Jan. 19, 1940, p. 41.

Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

**Caracara latebrosus (WETMORE)**

*Polyborus latebrosus* WETMORE, Proc. Biol. Soc. Washington, vol. 33, Dec. 30, 1920, p. 77, pl. 2, figs. 5, 6.

Recent (extinct):<sup>66</sup> Cave deposits in Cueva Toraño, near Utuado, Puerto Rico.

## Subfamily FALCONINAE: FALCONS

Genus **FALCO** Linnaeus

*Falco* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 88. Type, by subsequent designation, *Falco subbuteo* Linnaeus (A. O. U. Comm., 1886).

Subgenus **HIEROFALCO** Cuvier

*Hierofalco* CUVIER, Règne Animal, vol. 1, 1817 (Dec. 7, 1816), p. 312. Type, by monotypy, *Falco candicans* Gmelin.

**Falco mexicanus** SCHLEGEL: Prairie Falcon

*Falco mexicanus* SCHLEGEL, Abh. Geb. Zoöl. Vergl. Anat., Heft 3, 1851, p. 15.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: McKittrick, and Rancho La Brea, Los Angeles, California.

**Falco swarthi** MILLER

*Falco swarthi* L. H. MILLER, Condor, vol. 29, No. 3, May 15, 1927, p. 152, fig. 54.

Late Pleistocene: McKittrick, California.

**Falco oregonus** HOWARD

*Falco oregonus* H. HOWARD, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 178, pl. 1, figs. 2, 3.

Late Pleistocene: Fossil Lake, Oregon.

Subgenus **RHYNCHODON** Nitzsch

*Rhynchodon* NITZSCH, Obs. Avium Art. Carot. Comm., 1829, p. 20. Type, by subsequent designation, *Falco peregrinus* Tunstall (A. O. U. Comm., 1886).

<sup>66</sup> Included here since it has not been found in living form, being known only from bones.

**Falco peregrinus TUNSTALL: Peregrine Falcon**

*Falco Peregrinus* TUNSTALL, Orn. Brit., 1771, p. 1.

Modern form reported from Late Pleistocene: Potter Creek Cave, Shasta County, McKittrick, and Rancho La Brea, Los Angeles, California.

**Subgenus TINNUNCULUS Vieillot**

*Tinnunculus* VIEILLOT, Ois. Amér. Sept., vol. 1, 1807, p. 39. Type, by subsequent designation, *Falco columbarius* Linnaeus (Walden, 1872).

**Falco columbarius LINNAEUS: Pigeon Hawk**

*Falco columbarius* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 90.

Modern form reported from late Pleistocene: McKittrick, and Rancho La Brea, Los Angeles, California.

**Falco ramenta WETMORE**

*Falco ramenta* WETMORE, Proc. U. S. Nat. Mus., vol. 84, Nov. 3, 1936, p. 75, fig. 14.

Miocene (Sheep Creek formation): Dawes County, Nebraska.

**Subgenus CERCHNEIS Boie**

*Cerchneis* BOIE, Isis von Oken, vol. 19, Heft 10, October 1826, col. 970. Type, by monotypy, *Falco ruficulus* Daudin.

**Falco sparverius LINNAEUS: Sparrow Hawk**

*Falco sparverius* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 90.

Modern form reported from Pleistocene: Cavern deposits near Lecanto, Florida; San Josecito Cavern, Aramberri, Nuevo León. Late Pleistocene: Samwel and Potter Creek caves, Shasta County, McKittrick, Carpinteria, and Rancho La Brea, Los Angeles, San Pedro (Palos Verdes sand), Los Angeles County, California.

Order GALLIFORMES: MEGAPODES, CURASSOWS, PHEASANTS, and HOATZINS

Suborder GALLI: MEGAPODES, CURASSOWS, GROUSE, and PHEASANTS

Superfamily CRACOIDEA: MEGAPODES, CURASSOWS, and GUANS

Family GALLINULOOIDIDAE: GALLINULOIDES

Genus GALLINULOIDES Eastman

*Gallinuloides* EASTMAN, Geol. Mag., February 1900, p. 54. Type, by monotypy, *Gallinuloides wyomingensis* Eastman.

**Gallinuloides wyomingensis EASTMAN**

*Gallinuloides wyomingensis* EASTMAN, Geol. Mag., n. s., vol. 7, pt. 4, No. 2, February 1900, p. 54, pl. 4.

Middle Eocene (Green River formation): Fossil (type locality), and Henry's Fork, Wyoming.

**Family CRACIDAE: CURASSOWS, GUANS, and CHACHALACAS****Genus ORTALIS Merrem**

*Ortalida* (accusative case) = *Ortalis* (nominative) MERREM, Avium Rar. Icones et Descrip., vol. 2, 1786, p. 40. Type, by original designation, *Phasianus motmot* Linnaeus.

**Ortalis phengites WETMORE**

*Ortalis phengites* WETMORE, Bull. Amer. Mus. Nat. Hist., vol. 48, art. 12, Dec. 3, 1923, p. 487, figs. 1-2.

Lower Pliocene (Upper Snake Creek beds): South of Agate, Sioux County, Nebraska.

**Ortalis tantala WETMORE**

*Ortalis tantala* WETMORE, Condor, vol. 35, No. 2, Mar. 15, 1933, p. 64, figs. 10-14.

Lower Miocene (Lower Harrison beds): Carnegie Hill, Sioux County, Nebraska.

**Ortalis pollicaris MILLER**

*Ortalis pollicaris* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 91, fig. 5.

Lower Miocene (Rosebud formation): Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota.

**Genus BOREORTALIS Brodkorb**

*Boreortalis* BRODKORB, Wilson Bull., vol. 66, No. 3, September (Oct. 29), 1954, p. 180. Type, by original designation, *Boreortalis laesslei* Brodkorb.

**Boreortalis laesslei BRODKORB**

*Boreortalis laesslei* BRODKORB, Wilson Bull., vol. 66, No. 3, September (Oct. 29), 1954, p. 182, fig. 1 (on p. 181).

Lower Miocene (Hawthorn formation): Thomas Farm, 8 miles north of Bell, Gilchrist County, Florida.

Superfamily PHASIANOIDEA: GROUSE, QUAILS, PHEASANTS, and TURKEYS

Family TETRAONIDAE: GROUSE and PTARMIGANS

Genus **DENDRAGAPUS** Elliot

*Dendragapus* ELLIOT, Proc. Acad. Nat. Sci. Philadelphia, vol. 16, No. 1, January-February (April 23), 1864, p. 23. Type, by subsequent designation, *Tetrao obscurus* Say (Baird, Brewer, and Ridgway, 1874).

**Dendragapus obscurus** (SAY): Blue Grouse

*Tetrao obscurus* SAY, in Long, Exped. Rocky Mts., vol. 2, 1823, p. 14.

Modern form reported from late Pleistocene: Samwel and Potter Creek caves, Shasta County, California.

**Dendragapus lucasi** (SHUFELDT)<sup>67</sup>

*Pediocates lucasi* SHUFELDT, Auk, vol. 8, No. 4, October 1891, p. 367.

Late Pleistocene: Fossil Lake, Oregon.

**Dendragapus nanus** (SHUFELDT)<sup>67</sup>

*Pediocates nanus* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891, p. 821.

Late Pleistocene: Fossil Lake, Oregon.

Genus **BONASA** Stephens

*Bonasa* STEPHENS, in Shaw, Gen. Zool., vol. 9, pt. 2, 1819, p. 298. Type, by subsequent designation, *Tetrao umbellus* Linnaeus (A. O. U. Committee, 1886).

**Bonasa umbellus** (LINNAEUS): Ruffed Grouse<sup>68</sup>

*Tetrao umbellus* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 275.

Modern form reported from Pleistocene: Cave near Frankstown, Pennsylvania; Cumberland Cave, near Corriganville, Allegany County, Maryland; caves of Tennessee. Late Pleistocene: Potter Creek Cave, Shasta County, California.

Genus **TYMPANUCHUS** Gloger<sup>69</sup>

*Tympanuchus* GLOGER, Hand- und Hilfsbuch Naturg., 1842 (pp. 1-450, 1841), p. 396. Type, by monotypy, *Tetrao cupidus* Linnaeus.

<sup>67</sup> Assigned to *Dendragapus* by Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 180.

<sup>68</sup> *Bonasa ceres* Shufeldt, Bull. Amer. Mus. Nat. Hist., vol. 32, Aug. 4, 1913, p. 299, pl. 55, figs. 18-20, pl. 56, figs. 45-72, from the Pleistocene of the fissure beds of Arkansas is possibly a synonym. On p. 300 of the reference cited the author alludes to it as *Lagopus ceres*.

<sup>69</sup> Records from Fossil Lake, Oregon, formerly placed under *Tympanuchus pallidicinctus* are now referred to *Centrocercus urophasianus* and *Dendragapus lucasi*. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 179.

**Tympانuchus lulli SHUFELDT**

*Tympانuchus lulli* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 69, pl. 12, fig. 90.

? Pleistocene: <sup>70</sup> Hornerstown, New Jersey.

**Tympانuchus stirtoni MILLER**

*Tympانuchus stirtoni* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 92, fig. 6.

Lower Miocene (Rosebud formation): Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota.

**Genus PEDIOECETES Baird**

*Pedioecetes* BAIRD, Rep. Expl. and Surv. R. R. Pac., vol. 9, 1858, pp. xxi, xliv. Type, by monotypy, *Tetrao phasianellus* LINNAEUS.

**Pedioecetes phasianellus (LINNAEUS): Sharp-tailed Grouse**

*Tetrao Phasianellus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 160.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.

**Genus CENTROERCUS Swainson**

*Centrocercus* SWAINSON, in Swainson and Richardson, Fauna Bor.-Amer., vol. 2, 1831 (1832), pp. 358, 496. Type, by original designation, *Tetrao urophasianus* Bonaparte.

**Centrocercus urophasianus (BONAPARTE): Sage Grouse**

*Tetrao urophasianus* BONAPARTE, Zool. Journ., vol. 3, No. 10, April-September, 1827, p. 213.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.

**Genus PALAEALECTORIS Wetmore**

*Palaealectoris* WETMORE, Condor, vol. 32, No. 3, May 15, 1930, p. 152. Type, by monotypy, *Palaealectoris incertus* Wetmore.

**Palaealectoris incertus WETMORE**

*Palaealectoris incertus* WETMORE, Condor, vol. 32, No. 3, May 15, 1930, p. 152, figs. 51-53.

Lower Miocene (Lower Harrison beds): Agate fossil quarry, near Agate, Sioux County, Nebraska.

**Genus PALAEOTETRIX Shufeldt**

*Palaeotetrix* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891, p. 821. Type, by monotypy, *Palaeotetrix gilli* Shufeldt.

<sup>70</sup> Cited in the original description as "Post-Pliocene."

**Palaeotetrix gilli SHUFELDT**

*Palaeotetrix gilli* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891, p. 821.

Late Pleistocene: Fossil Lake, Oregon.

**Genus PALAEOPHASIANUS Shufeldt**

*Palaeophasianus* SHUFELDT, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, Aug. 4, 1913, p. 291. Type, by monotypy, *Palaeophasianus meleagroides* Shufeldt.

**Palaeophasianus meleagroides SHUFELDT**

*Palaeophasianus meleagroides* SHUFELDT, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, Aug. 4, 1913, p. 291, pl. 58, figs. 81-84, 86-88.

Lower Eocene (Wasatch): Elk Creek, Big Horn Basin (type locality). Eocene (Bridger): Henry's Fork, Wyoming.

**Family PHASIANIDAE: QUAILS, PHEASANTS, and PEACOCKS****Subfamily ODONTOPHORINAE: AMERICAN QUAILS****Genus COLINUS Goldfuss**

*Colinus* GOLDFUSS, Handb. Zool., vol. 2, 1820, p. 220. Type, by monotypy, *Perdix mexicanus*, Caille de la Louisiane, Pl. Enl. 149 = *Tetrao virginianus* Linnaeus.

**Colinus virginianus (LINNAEUS): Bobwhite**

*Tetrao virginianus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 161.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Melbourne, and cavern deposits near Lecanto, Florida; caves of Tennessee.

**Colinus hibbardi WETMORE**

*Colinus hibbardi* WETMORE, Univ. Kansas Sci. Bull., vol. 30, pt. 1, No. 9, May 15, 1944, p. 96, figs. 4-8.

Upper Pliocene (Rexroad fauna): Meade County, Kansas.

**? Colinus eatoni SHUFELDT<sup>71</sup>**

*Colinus eatoni* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 70, pl. 13, fig. 103.

Geologic age uncertain: Western Kansas.

<sup>71</sup> Relationship uncertain. From the published figure it may possibly be an oscinine passeriform.

Genus **LOPHORTYX** Bonaparte

*Lophortyx* BONAPARTE, Geogr. and Comp. List, 1838, p. 42. Type, by subsequent designation, *Tetrao californicus* Shaw (Gray, 1840).

**Lophortyx californicus** (SHAW) : California Quail

*Tetrao californicus* SHAW, in Shaw and Nodder, Nat. Misc. vol. 9, 1798, text to pl. 345.

Modern form reported from late Pleistocene: Hawver Cave, Eldorado County, Carpinteria, McKittrick, Rancho La Brea, Los Angeles and San Pedro (Palos Verdes sand), Los Angeles County, California.

Genus **OREORTYX** Baird

*Oreortyx* BAIRD, Rep. Expl. and Surv. R. R. Pac., vol. 9, 1858, pp. xxi, xlvi, 638, 642. Type, by original designation, *Ortyx picta* Douglas.

**Oreortyx pictus** (DOUGLAS) : Mountain Quail

*Ortyx picta* DOUGLAS, Trans. Linn. Soc. London, vol. 16, pt. 1, 1829, p. 143.

Modern form reported from late Pleistocene: Potter Creek and Samwel caves, Shasta County, and Hawver Cave, Eldorado County, California. Quaternary (probably Recent) : Rocky Arroyo, New Mexico.

Genus **MIORTYX** Miller

*Miortyx* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 93. Type, by original designation, *Miortyx teres* Miller.

**Miortyx teres** MILLER

*Miortyx teres* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 93, fig. 7.

Lower Miocene (Rosebud formation) : Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota.

Genus **CYRTONYX** Gould

*Cyrtonyx* GOULD, Monogr. Odontophoridae, pt. 1, 1844, pl. and text. Type, by monotypy, *Ortyx massena* Lesson = *Ortyx montezumae* Vigors.

**Cyrtonyx montezumae** (VIGORS) : Harlequin Quail

*Ortyx Montezumae* VIGORS, Zool. Journ., vol. 5, June 1830, p. 275.

Modern form reported from Pleistocene : San Josecito Cave, Aramberri, Nuevo León.

**Cyrtonyx cooki WETMORE**

*Cyrtonyx cooki* WETMORE, Condor, vol. 36, No. 1, Jan. 15, 1934, p. 30, fig. 5.

Upper Miocene (Upper Sheep Creek beds): 17 miles south of Agate, Sioux County, Nebraska.

**Cyrtonyx tedfordi MILLER<sup>72</sup>**

*Cyrtonyx tedfordi* L. H. MILLER, Condor, vol. 54, No. 5, Sept. 22, 1952, p. 298, fig. 2.

Upper Miocene (Barstow formation): Lake bed horizon, near Barstow, California.

**Subfamily PHASIANINAE: OLD WORLD PARTRIDGES and PHEASANTS****Genus PHASIANUS Linnaeus**

*Phasianus LINNAEUS*, Syst. Nat., ed. 10, vol. 1, 1758, p. 158. Type, by tautonymy, *Phasianus colchicus* Linnaeus.

**Phasianus alfhildae SHUFELDT<sup>73</sup>**

*Phasianus alfhildae* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 71.

Geologic age uncertain: 100 feet below horizon of Haystack Butte, Haystack Mountain, Wyoming.

**Genus ARCHAEOPHASIANUS Lambrecht**

*Archaeophasianus LAMBRECHT*, Handb. Palaeorn., 1933, p. 438. Type, by subsequent designation, *Phasianus roberti* Stone (Brodkorb, 1952).

**Archaeophasianus roberti (STONE)**

*Phasianus roberti* STONE, Auk, vol. 32, No. 3, July (June 29), 1915, p. 376.

Lower Miocene (Middle John Day formation): Paulina<sup>74</sup> Creek, 6 miles from junction with Beaver Creek, Crook County, Oregon.

**? Archaeophasianus mioceanus (SHUFELDT)<sup>75</sup>**

*Phasianus mioceanus* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 60, pl. 13, figs. 94, 96.

Miocene: Chimney Rock and Scott's Bluff, Nebraska.

<sup>72</sup> Allocation in this genus tentative.

<sup>73</sup> Allocation of this species to the Old World genus *Phasianus* follows the usage of the original describer, and is subject to verification.

<sup>74</sup> Given as "Parilina" in the original place of publication, through an error in reading the field label.

<sup>75</sup> Described from fragmentary humerus and femur from the two separate localities listed. Probably a composite, with neither bone coming from a bird of this family. Assigned to *Archaeophasianus* by Lambrecht.

## Family MELEAGRIDIDAE: TURKEYS

## Genus MELEAGRIS Linneaus

*Meleagris* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 156. Type, by tautonomy, *Meleagris gallopavo* Linnaeus.

**Meleagris gallopavo LINNAEUS: Turkey<sup>76</sup>**

*Meleagris Gallopavo* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 156.

Modern form reported from Upper Pliocene (Rexroad formation): Meade County Kansas. Pleistocene: Hartman's or Crystal Hill Cave, near Stroudsburg, and Durham Cave, near Riegelsville, Bucks County, and caves near Carlisle, Pennsylvania; North Liberty, St. Joseph County, Indiana; Ashmore, Coles County, Illinois; caves of Tennessee; fissure beds, Arkansas; Seminole Field, Pinellas County, Sarasota, Bradenton, Itchtucknee River, Melbourne, and cavern deposits at Ocala and Lecanto, Florida; near San Antonio, Socorro County, New Mexico.<sup>77</sup>

**Meleagris antiqua MARSH**

*Meleagris antiquus* MARSH, Amer. Journ. Sci., ser. 3, vol. 2, August 1871, p. 126.

Oligocene (White River formation): "G Ranch," Colorado.

**Meleagris celer MARSH**

*Meleagris celer* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872, p. 261.

Pleistocene: Monmouth County, New Jersey.

**Meleagris richmondi SHUFELDT**

*Meleagris richmondi* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 67, pl. 2, fig. 19.

Pleistocene: Near Mission San Jose, Alameda County, California.

**Meleagris superba COPE**

*Meleagris superbus* COPE, Trans. Amer. Philos. Soc., n.s., vol. 14, pt. 1, December 1870, p. 239.

Pleistocene: Monmouth County (type locality), and Manalapan,<sup>78</sup> New Jersey; Frankstown and Port Kennedy caves, Pennsylvania.

<sup>76</sup> *Ardea sellardsi* Shufeldt, 9th Ann. Rep. Florida State Geol. Surv., 1917, p. 38, pl. 2, fig. 15, from Vero (stratum 3) is a synonym of *Meleagris gallopavo* according to Wetmore, Smithsonian Misc. Coll., vol. 85, No. 2, Apr. 13, 1931, pp. 10-11, 32-33. The deposit is now considered to be of Recent age. See Cooke, Florida Geol. Surv. Geol. Bull. 29, 1945, pp. 306-307.

<sup>77</sup> Possibly Upper Pliocene.

<sup>78</sup> Type locality of *Meleagris altus* Marsh, Amer. Journ. Sci., ser. 3, vol. 4, 1872, p. 260, which is a synonym.

**Meleagris tridens WETMORE**

*Meleagris tridens* WETMORE, Smithsonian Misc. Coll., vol. 85, No. 2, Apr. 13, 1931, p. 33, fig. 13, pl. 6.

Pleistocene: Seminole Field, Pinellas County, Florida.

**Meleagris crassipes MILLER**

*Meleagris crassipes* L. H. MILLER, Condor, vol. 42, No. 3, May 15, 1940, p. 154, figs. 44-45.

Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

**Genus PARAPAVO Miller**

*Parapavo* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 9, No. 9, Mar. 10, 1916, p. 96. Type, by monotypy, *Pavo californicus* Miller.

**Parapavo californicus (MILLER)**

*Pavo californicus* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 5, No. 19, Aug. 14, 1909, p. 285, pl. 25.

Upper Pliocene: Cita Canyon, Randall County, Texas. Pleistocene: York Valley site at Avenue 45 and Lincoln Avenue, Highland Park, Los Angeles, and southwest of La Habra near Los Angeles-Orange County line, California. Late Pleistocene: Carpinteria, and Rancho La Brea (type locality),<sup>79</sup> Los Angeles, California.

**Order GRUIFORMES: CRANES, RAILS, and ALLIES****Suborder GRUES: CRANES, LIMPKINS, TRUMPETERS, and RAILS****Superfamily GRUOIDEA: CRANES, LIMPKINS, and TRUMPETERS****Family GERANOIDIDAE: GERANOIDES****Genus GERANOIDES Wetmore**

*Geranoides* WETMORE, Condor, vol. 35, No. 3, May 15, 1933, p. 115. Type, by original designation, *Geranoides jepsoni* Wetmore.

**Geranoides jepsoni WETMORE**

*Geranoides jepsoni* WETMORE, Condor, vol. 35, No. 3, May 15, 1933, p. 115, fig. 22.

Lower Eocene (Gray Bull member): South Elk Creek, Bighorn County, Wyoming.

<sup>79</sup> Recorded also from early Recent deposits in Pit 10 at this site (Howard, H., and Miller, A. H., Carnegie Inst. Washington Publ. 514, 1939, p. 43). *Parapavo oklahomensis* Stovall and Sandoz, Proc. Oklahoma Acad. Sci., vol. 16, 1936, p. 77, is a nomen nudum.

## Family GRUIDAE: CRANES

## Subfamily GRUINAE: CRANES

Genus **ALETORNIS** Marsh<sup>80</sup>

*Aletornis* MARSH, Amer. Journ. Sci., ser. 3, vol. 14, October 1872, p. 256.  
Type, by subsequent designation, *Aletornis nobilis* Marsh (Hay, 1902).

**Aletornis bellus** MARSH<sup>81</sup>

*Aletornis bellus* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872,  
p. 258.

Eocene (Bridger formation) : Grizzly Buttes, Wyoming.

**Aletornis gracilis** MARSH<sup>81</sup>

*Aletornis gracilis* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872,  
p. 258.

Eocene (Bridger formation) : Henry's Fork, Wyoming.

**Aletornis nobilis** MARSH<sup>82</sup>

*Aletornis nobilis* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872, p. 256.

Eocene (Bridger formation) : Grizzly Buttes, Wyoming.

**Aletornis pernix** MARSH

*Aletornis pernix* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872, p. 256.

Eocene (Bridger formation) : Henry's Fork, Wyoming.

Genus **FULICALETORNIS** Lambrecht

*Fulicaletornis* LAMBRECHT, Handb. Palaeorn., 1933, p. 479. Type, by monotypy, *Aletornis venustus* Marsh.

<sup>80</sup> Allocation in the subfamily Gruinae provisional.

<sup>81</sup> Considered by Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, pp. 32, 76, as possibly a species of Scolopacidae.

<sup>82</sup> Marsh in his original proposal of the genus *Aletornis* included in it five species without selecting a type. From the five in question Hay, U. S. Geol. Surv., Bull. 179, 1902, p. 527, designated *Aletornis nobilis* Marsh as genotype. Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, 1915, pp. 30, 31, placed *A. nobilis* in *Grus*, and described in the same paper (p. 77) *Grus marshi*. Lambrecht, Handb. Palaeorn., 1933, p. 520, proposed the genus *Protogrus* for *Aletornis nobilis* and *Grus marshi*, without designating a type. Lambrecht's action as regards *A. nobilis* obviously is erroneous as his proposed genus includes the genotype of *Aletornis*. *Aletornis nobilis*, therefore, is to be listed as above, and pending study *Grus marshi* is included tentatively under *Grus*. Brodkorb, Condor, vol. 54, No. 3, May 21, 1952, p. 175, has designated *A. nobilis*, already the type of *Aletornis* through action by Hay, as the type of *Protogrus*. That generic name therefore becomes a synonym of *Aletornis*.

*Fulicaletornis venustus* (MARSH)<sup>83</sup>

*Aletornis venustus* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872, p. 257.

Eocene (Bridger formation): Henry's Fork, Wyoming.

#### Genus **PARAGRUS** Lambrecht

*Paragrus* LAMBRECHT, Handb. Palaeorn., 1933, p. 520. Type, by monotypy, *Gallinuloides prentici* Loomis.

**Paragrus prentici** (LOOMIS)

*Gallinuloides prentici* F. B. LOOMIS, Amer. Journ. Sci., ser. 4, vol. 22, December 1906, p. 481, figs. 1-3.

Eocene (Wasatch): Head of Elk Creek, 10 miles west of Otto, Wyoming.

#### Genus **GRUS** Pallas

*Grus* PALLAS, Misc. Zool., 1766, p. 66. Type, by tautonymy, *Ardea grus* LINNAEUS.

**Grus americana** (LINNAEUS): Whooping Crane

*Ardea americana* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 142.

Modern form reported from late Upper Pliocene: Snake River, 13 miles northwest of Grandview, Idaho. Pleistocene: Seminole Field, Pinellas County, Ichetucknee River, and Melbourne (stratum 2), Florida. Late Pleistocene: Rancho La Brea, Los Angeles, California.

**Grus canadensis** (LINNAEUS): Sandhill Crane<sup>84</sup>

*Ardea canadensis* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 141.

Modern form reported from Lower Pliocene (Upper Snake Creek beds): Sioux County, Nebraska. From ? Pleistocene: Niobrara River, Nebraska,<sup>85</sup> and Grizzly Buttes, Wyoming. From Pleistocene: Ash-

<sup>83</sup> Systematic allocation provisional. Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, pp. 31, 32, 76, placed this species in the genus *Fulica*, the principal basis for Lambrecht's action in proposing *Fulicaletornis*.

<sup>84</sup> *Grus canadensis* is used as a species name to cover records of cranes of this type from the Pliocene and Pleistocene, including specimens that range in size from the modern little brown crane to the larger races of the sandhill crane.

*Grus minor* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 5, August 1910, p. 446, fig. 8, from the Pleistocene of Rancho La Brea, is now considered by the describer as a synonym of *Grus canadensis*.

<sup>85</sup> This specimen, from either Pliocene or Pleistocene deposits, is the basis of *Grus haydeni* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, 1870, p. 214, considered by Wetmore, Amer. Mus. Nov., No. 302, Feb. 29, 1928, p. 4, as a synonym of *Grus canadensis*.

more, Coles County, Illinois; Melbourne, Seminole Field, Pinellas County, and Bradenton, Florida. Late Pleistocene: Rancho La Brea, Los Angeles, and McKittrick, California.

**Grus proavus** MARSH

*Grus proavus* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872, p. 261.

Pleistocene: Monmouth County, New Jersey.

**Grus nannodes** WETMORE and MARTIN

*Grus nannodes* WETMORE and MARTIN, Condor, vol. 32, No. 1, Jan. 20, 1930, p. 62, figs. 23-25.

Middle Pliocene (Ogallala formation, Edson beds): Sec. 25, T. 10 S., R. 38 W., Sherman County, Kansas.

**Grus conferta** MILLER and SIBLEY

*Grus conferta* A. H. MILLER and C. G. SIBLEY, Condor, vol. 44, No. 3, May 15, 1942, p. 126, fig. 50.

Late Lower Pliocene (Siesta formation): Black Hawk Ranch, southern base of Mount Diablo, Contra Costa County, California.

**Grus marshi** SHUFELDT<sup>86</sup>

*Grus marshi* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 77, pl. 15, figs. 144-147.

Eocene (Bridger formation): Henry's Fork, Wyoming.

Family ARAMIDAE: LIMPKINS

Genus ARAMUS Vieillot

*Aramus* VIEILLOT, Analyse, 1816, p. 58. Type, by monotypy, *Courliri* Buffon = *Ardea scolopacea* Gmelin.

**Aramus guarauna** LINNAEUS: Limpkin

*Scolopax Guarauna* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 242.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, and Itchucknee River, Florida.

Genus BADISTORNIS Wetmore

*Badistornis* WETMORE, Journ. Morph., vol. 66, Jan. 2, 1940, p. 30. Type, by original designation, *Badistornis aramus* Wetmore.

<sup>86</sup> Generic allocation doubtful. See footnote under *Aletornis nobilis* (p. 59).

**Badistornis aramus** WETMORE

*Badistornis aramus* WETMORE, Journ. Morph., vol. 66, Jan. 2, 1940, p. 30, figs. 7-10.

Oligocene (*Metamynodon* zone, Brule formation) : 35 miles southwest of Scenic, South Dakota.

**Genus ARAMORNIS** Wetmore

*Aramornis* WETMORE, Amer. Mus. Nov., No. 211, Mar. 11, 1926, p. 1. Type, by original designation, *Aramornis longurio* Wetmore.

**Aramornis longurio** WETMORE

*Aramornis longurio* WETMORE, Amer. Mus. Nov., No. 211, Mar. 11, 1926, p. 1, figs. 1-4.

Middle Miocene (Lower Sheep Creek beds) : Snake Creek Quarries, Sioux County, Nebraska.

**Genus GNOTORNIS** Wetmore

*Gnotornis* WETMORE, Smithsonian Misc. Coll., vol. 101, No. 14, May 11, 1942, p. 1. Type, by monotypy, *Gnotornis aramiellus* Wetmore.

**Gnotornis aramiellus** WETMORE

*Gnotornis aramiellus* WETMORE, Smithsonian Misc. Coll., vol. 101, No. 14, May 11, 1942, p. 1, figs. 1-4.

Upper Oligocene (Upper Brule formation, *Protoceras-Leptochenia* beds) : 25 miles southeast of Scenic and 6 miles east of Rockyford, Washington County, South Dakota.

## Superfamily RALLOIDEA: RAILS

## Family RALLIDAE: RAILS, GALLINULES, and COOTS

## Subfamily RALLINAE: RAILS

**Genus TELMATORNIS** Marsh<sup>87</sup>

*Telmatornis* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 210. Type, by subsequent designation, *Telmatornis priscus* Marsh (Hay, 1902).

**Telmatornis affinis** MARSH

*Telmatornis affinis* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 211.

Paleocene (Hornerstown marl) : Hornerstown, New Jersey.

<sup>87</sup> Allocation in the subfamily Rallinae provisional.

**Telmatornis priscus** MARSH

*Telmatornis priscus* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 210.

Paleocene (Hornerstown marl) : Hornerstown, New Jersey.

**Telmatornis rex** SHUFELDT

*Telmatornis rex* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 27, pl. 13, fig. 101.

Paleocene (Hornerstown marl) : Hornerstown, New Jersey.

**Genus PALAEORALLUS** Wetmore

*Palaeorallus* WETMORE, Condor, vol. 33, No. 3, May 15, 1931, p. 108. Type, by original designation, *Palaeorallus troxelli* Wetmore.

**Palaeorallus troxelli** WETMORE

*Palaeorallus troxelli* WETMORE, Condor, vol. 33, No. 3, May 15, 1931, p. 108, figs. 26-29.

Lower Eocene (Wasatch formation) : Northwest of Little Tatman Mountain, near Burlington, Wyoming.

**Genus CRECCOIDES** Shufeldt

*Creccoides* SHUFELDT, Proc. Amer. Philos. Soc., vol. 30, Apr. 14, 1892, p. 125. Type, by monotypy, *Creccoides osbornii* Shufeldt.

**Creccoides osbornii** SHUFELDT

*Creccoides osbornii* SHUFELDT, Proc. Amer. Philos. Soc., vol. 30, Apr. 14, 1892, p. 125.

Pliocene (Blanco fauna) : Blanco Canyon, Crosby County, Texas.

**Genus EPIRALLUS** Miller

*Epirallus* L. H. MILLER, Univ. California Publ. Zoöl., vol. 47, Mar. 6, 1942, p. 43. Type, by monotypy, *Epirallus natator* Miller.

**Epirallus natator** MILLER

*Epirallus natator* L. H. MILLER, Univ. California Publ. Zoöl., vol. 43, Mar. 6, 1942, p. 43, fig. 1a.

Pleistocene : San Josecito Cave, Aramberri, Nuevo León.

**Genus RALLUS** Linnaeus

*Rallus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 153. Type, by subsequent designation, *Rallus aquaticus* Linnaeus (Fleming, 1821).

**Rallus elegans** AUDUBON : King Rail

*Rallus elegans* AUDUBON, Birds Amer. (folio), vol. 3, 1834, pl. 203.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, and Itchtucknee River, Florida.

**Rallus longirostris** BODDAERT: Clapper Rail

*Rallus longirostris* BODDAERT, Table Planch. Enlum., 1783, p. 52.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

**Rallus limicola** VIEILLOT: Virginia Rail

*Rallus limicola* VIEILLOT, Nouv. Dict. Hist. Nat., nouv. éd., vol. 28, May 1819, p. 558.

Modern form recorded from Pleistocene: Reddick, Marion County, Florida. Late Pleistocene: Fossil Lake, Oregon; McKittrick, California.

**Rallus prenticei** WETMORE

*Rallus prenticei* WETMORE, Univ. Kansas Sci. Bull., vol. 30, pt. 1, No. 9, May 15, 1944, p. 99, figs. 9-19.

Upper Pliocene (Rexroad fauna): Meade County, Kansas.

**Genus PORZANA** Vieillot

*Porzana* VIEILLOT, Analyse, 1816, p. 61. Type, by monotypy and tautonymy, Marouette Buffon = *Rallus porzana* LINNÆUS.

**Porzana carolina** (LINNÆUS): Sora

*Rallus carolinus* LINNÆUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 153.

Pleistocene: Near Reddick, Marion County, Florida.

**Porzana auffenbergi** BRODKORB

*Porzana auffenbergi* BRODKORB, Condor, vol. 56, No. 2, Mar. 26, 1954, p. 103, fig. 1.

Pleistocene (stratum 2, shell layer, Sangamon stage): near Haile, Alachua County, Florida.

**Genus LATERALLUS** Gray

*Latrallus* G. R. GRAY, Cat. Gen. Subgen. Birds, 1855, p. 120. Type, by monotypy, *Rallus melanophaius* Vieillot.

**Laterallus guti** BRODKORB

*Latrallus guti* BRODKORB, Wilson Bull., vol. 64, No. 2, June 16, 1952, p. 80, fig. 1.

Pleistocene: 1 mile south of Reddick, Marion County, Florida.

## Genus ARAMIDES Pucheran

*Aramides* PUCHERAN, Rev. Zool., vol. 8, August 1845, p. 277. Type, by original designation, *Fulica cayennensis* Gmelin.

## Aramides cajanea (MÜLLER): Wood Rail

*Fulica Cajanea* P. L. S. MÜLLER, Natursyst. Suppl., 1776, p. 119.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

## Genus NESOTROCHIS Wetmore

*Nesotrochis* WETMORE, Proc. U. S. Nat. Mus., vol. 54, Nov. 21, 1918, p. 516. Type, by original designation, *Nesotrochis debooyi* Wetmore.

## Nesotrochis debooyi WETMORE

*Nesotrochis debooyi* WETMORE, Proc. U. S. Nat. Mus., vol. 54, Nov. 21, 1918, p. 516, pl. 82.

Recent (extinct):<sup>88</sup> Archeological sites on St. Thomas<sup>89</sup> and St. Croix, Virgin Islands; and at Barrio Cañas, near Ponce; cavern deposits in Cueva Clara and Cueva San Miguel, near Morovis; Cueva Toraño, and a cave on Hacienda Jobo, near Utuado, Puerto Rico.

## Subfamily GALLINULINAE: GALLINULES

## Genus PORPHYRULA Blyth

*Porphyryla* BLYTH, Cat. Birds Mus. Asiat. Soc., 1849 (1852), p. 283. Type, by monotypy, *P. chloronotus* Blyth = *Porphyrio allenii* Thomson.

## Porphyryla martinica (LINNAEUS): Purple Gallinule

*Fulica martinica* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 259.

Modern form reported from Pleistocene: Haile, Alachua County, Florida.

## Genus GALLINULA Brisson

*Gallinula* BRISSON, Orn., 1760, vol. 1, p. 50; vol. 6, p. 2. Type, by tautonymy *Gallinula* Brisson = *Fulica chloropus* Linnaeus.

## Gallinula chloropus (LINNAEUS): Common Gallinule

*Fulica Chloropus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 152.

Modern form reported from Upper Pliocene (Hagerman lake beds): Near Hagerman, Idaho. From Pleistocene:<sup>90</sup> Seminole Field,

<sup>88</sup> Included here as it has not been found in living form, being known only from bones. Possibly the species lived until Spanish colonial times.

<sup>89</sup> Type locality a kitchen midden at Magen's Bay, on the north coast of St. Thomas.

<sup>90</sup> Reported from Pleistocene at Haile, Alachua County, Florida, on basis of a

Pinellas County, and Itchtucknee River, Florida. Late Pleistocene: Baños de Ciego Montero, Cuba.

#### Genus **PALAEOREX** Wetmore<sup>91</sup>

*Palaeorex* WETMORE, Proc. Colorado Mus. Nat. Hist., vol. 7, No. 2, July 15, 1927, p. 9. Type, by monotypy, *Palaeorex fax* Wetmore.

##### **Palaeorex fax** WETMORE

*Palaeorex fax* WETMORE, Proc. Colorado Mus. Nat. Hist., vol. 7, No. 2, July 15, 1927, p. 9, figs. 15-18.

Lower Oligocene (Chadronian, Horsetail Creek facies): Horsetail Creek, Weld County, Colorado.

#### Genus **EOCREX** Wetmore

*Eocrex* WETMORE, Condor, vol. 33, No. 3, May 15, 1931, p. 107. Type, by original designation, *Eocrex primus* Wetmore.

##### **Eocrex primus** WETMORE

*Eocrex primus* WETMORE, Condor, vol. 33, No. 3, May 15, 1931, p. 107, figs. 21-25.

Lower Eocene ("Wasatch" formation): Near Steamboat Springs, Sweetwater County, Colorado (sec. 13, T. 24 N., R. 102 W., in Cathedral Bluffs).

### Subfamily **FULICINAE**: Coots

#### Genus **FULICA** Linnaeus

*Fulica* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 152. Type, by subsequent designation, *Fulica atra* Linnaeus (Gray, 1840).

##### **Fulica americana** GMELIN: American Coot

*Fulica americana* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 704.

Modern form recorded from Upper Pliocene (Rexroad fauna): Meade County, Kansas. Pleistocene: Seminole Field, Pinellas County, Bradenton, Itchtucknee River, and Haile, Alachua County, Florida; Hemphill County, Texas; San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Rancho La Brea, Los Angeles, and San Pedro (Palos Verdes formation), Los Angeles County, California.

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cervical vertebra, by Brodkorb, Wilson Bull., vol. 65, No. 1, March (Apr. 22), 1953, p. 50.

<sup>91</sup> Subfamily allocation provisional.

**Fulica minor SHUFELDT**<sup>92</sup>

*Fulica minor* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891, p. 820.

Late Pleistocene: Fossil Lake, Oregon.

## Suborder CARIAMAE: CARIAMAS and ALLIES

## Family BATHORNITHIDAE: BATHORNITHES

## Genus BATHORNIS Wetmore

*Bathornis* WETMORE, Proc. Colorado Mus. Nat. Hist., vol. 7, No. 2, July 15, 1927, p. 11. Type, by monotypy, *Bathornis veredus* Wetmore.

**Bathornis veredus WETMORE**

*Bathornis veredus* WETMORE, Proc. Colorado Mus. Nat. Hist., vol. 7, No. 2, July 15, 1927, p. 11, figs. 19-24.

Lower Oligocene (Chadronian, Horsetail Creek facies): Horsetail Creek, Weld County, Colorado (type locality); near Crawford, Nebraska; Indian Creek, Pennington County, South Dakota.

**Bathornis celeripes WETMORE**

*Bathornis celeripes* WETMORE, Bull. Mus. Comp. Zoöl., vol. 75, October 1933, p. 302, figs. 6-14.

Upper Oligocene (Brule formation): Near Torrington, Goshen County, Wyoming (type locality); 12 miles northwest of Crawford, Nebraska.

**Bathornis cursor WETMORE**

*Bathornis cursor* WETMORE, Bull. Mus. Comp. Zoöl., vol. 75, October 1933, p. 310, figs. 15-19.

Upper Oligocene (Brule formation): Near Torrington, Goshen County, Wyoming.

**Bathornis geographicus WETMORE**

*Bathornis geographicus* WETMORE, Smithsonian Misc. Coll., vol. 101, No. 14, May 11, 1942, p. 3, figs. 5-13.

Upper Oligocene (Upper Brule formation, *Protoceras-Leptauenchia* beds): 25 miles southeast of Scenic and 6 miles east of Rockford, Washington County, South Dakota.

<sup>92</sup> Howard (Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, pp. 182-183) places all *Fulica* records from Fossil Lake, Oregon, under this name. She considers *minor* the Pleistocene ancestor of modern *Fulica americana*, listing it as *Fulica americana minor*, the relationship indicated by the trinomial expressing distribution through geologic time and not the geographic range of two subspecies existing simultaneously.

## Order DIATRYMIFORMES: DIATRYMAS

## Family DIATRYMIDAE: DIATRYMAS

## Genus BARORNIS Marsh

*Barornis* MARSH, Amer. Journ. Sci., ser. 3, vol. 48, 1894, p. 344. Type, by monotypy, *Barornis regens* Marsh.

Barornis regens MARSII<sup>93</sup>

*Barornis regens* MARSII, Amer. Journ. Sci., ser. 3, vol. 48, October 1894, p. 344, text fig.

Eocene: Squankum, Monmouth County, New Jersey.

## Genus DIATRYMA Cope

*Diatryma* COPE, Proc. Acad. Nat. Sci. Philadelphia, vol. 28, sign. 2, April 18, 1876, p. 11. Type, by monotypy, *Diatryma gigantea* Cope.

## Diatryma ajax SHUFELDT

*Diatryma ajax* SHUFELDT, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, Aug. 4, 1913, p. 287, pl. 52, figs. 4-5, pl. 53, figs. 8-10, pl. 54, figs. 13-14.

Lower Eocene (Wasatch formation): 3 (type locality) and 5 miles southeast of mouth of Pat O'Hara Creek, Clark's Fork Basin, Wyoming.

## Diatryma giganteum COPE

*Diatryma gigantea* COPE, Proc. Acad. Nat. Sci. Philadelphia, vol. 28, sign. 2, Apr. 18, 1876, p. 11.

Lower Eocene (Wasatch formation): New Mexico.<sup>94</sup>

## Diatryma steini MATTIIEW and GRANGER

*Diatryma steini* MATTIIEW and GRANGER, Bull. Amer. Mus. Nat. Hist., vol. 37, art. 11, May 28, 1917, p. 322, pls. 20-33.

Lower Eocene (Wasatch, Gray Bull member): South Elk Creek, Bighorn Basin, Wyoming.

## Genus OMORHAMPHUS Sinclair

*Omorhamphus* SINCLAIR, Proc. Amer. Philos. Soc., vol. 67, 1928, p. 51. Type, by monotypy, *Omorhamphus storchi* Sinclair.

<sup>93</sup> Considered a species of *Diatryma* by Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, pp. 37-38.

<sup>94</sup> Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 34, refers a fragment in Peabody Museum, Yale University, from Island Point, North Horseshoe, Gallina, New Mexico, to this species.

**Omorhamphus storchii SINCLAIR**

*Omorhamphus storchii* SINCLAIR, Proc. Amer. Philos. Soc., vol. 67, 1928, p. 52,  
pls. 1-2, figs. 1-3.

Lower Eocene (Lower Gray Bull horizon, Lower Wasatch): 1½ miles southeast of Dorsey Creek, about 2 miles south of Otto-Basin Road, Big Horn County, Wyoming.

**Order CHARADRIIFORMES: SHOREBIRDS, GULLS, and AUKS****Suborder CHARADRII: SHOREBIRDS****Superfamily CHARADRIOIDEA: PLOVERS, SANDPIPERs, and ALLIES****Family RHEGMINORNITHIDAE: RHEGMINORNIS****Genus RHEGMINORNIS Wetmore**

*Rhegminornis* WETMORE, Proc. New England Zoöl. Club, vol. 22, June 23, 1943, p. 61. Type, by original designation, *Rhegminornis calobates* Wetmore.

*Rhegminornis calobates* WETMORE, Proc. New England Zoöl. Club, vol. 22, June 23, 1943, p. 61, pl. 11, figs. 1-5.

Lower Miocene (Tampa limestone):<sup>95</sup> Thomas Farm, 8 miles north of Bell, Gilchrist County, Florida.

**Family HAEMATOPODIDAE: OYSTERCATCHERS****Genus PARACTIORNIS Wetmore**

*Paractiornis* WETMORE, Condor, vol. 32, No. 3, May 15, 1930, p. 133. Type, by monotypy, *Paractiornis perpusillus* Wetmore.

**Paractiornis perpusillus WETMORE**

*Paractiornis perpusillus* WETMORE, Condor, vol. 32, No. 3, May 15, 1930, p. 153, figs. 54-56.

Lower Miocene (Harrison formation): Carnegie Hill, Agate Fossil Quarry, near Agate, Sioux County, Nebraska.

<sup>95</sup> Cooke, Florida Geol. Surv., Geol. Bull. 29, 1945, pp. 119-120, believes that the specimen came from a sink in the Tampa limestone, rather than from the younger Hawthorn formation, to which it was ascribed by T. E. White, who collected it.

Genus **PALOSTRALEGUS** Brodkorb

*Palostralegus* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 19. Type, by original designation, *Palostralegus sulcatus* Brodkorb.

**Palostralegus sulcatus** BRODKORB

*Palostralegus sulcatus* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 20, fig. 18.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

Family CHARADRIIDAE: PLOVERS, TURNSTONES, and SURFBIRDS

## Subfamily CHARADRIINAE: PLOVERS

Genus **CHARADRIUS** Linnaeus

*Charadrius* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 150. Type, by tautomy, *Charadrius hiaticula* Linnaeus.

**Charadrius sheppardianus** COPE

*Charadrius sheppardianus* COPE, Bull. Geol. Geogr. Surv. Terr., vol. 6, No. 1, Feb. 11, 1881, p. 83.

Oligocene (Florissant lake beds): Florissant, Colorado.<sup>96</sup>

**Charadrius vociferus** LINNAEUS: Killdeer

*Charadrius vociferus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 150.

Modern form reported from late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

Genus **EUPODA** Brandt

*Eupoda* J. F. BRANDT, in Tchihatchev, Voy. Sci. Altai Orient., 1845, p. 444. Type, by monotypy, *Charadrius asiaticus* Pallas.

**Eupoda montana** (TOWNSEND): Mountain Plover

*Charadrius montanus* J. K. TOWNSEND, Journ. Acad. Nat. Sci. Philadelphia, vol. 7, pt. 2, Nov. 21, 1837, p. 192.

Modern form reported from late Pleistocene: McKittrick, Kern County, California.

<sup>96</sup> Generic and subfamily allocation tentative, particularly since the Florissant beds now are held to be Oligocene rather than Miocene by most paleontologists.

Genus **SQUATAROLA** Cuvier

*Squatarola* CUVIER, Règne Animal, vol. 1, 1817 (Dec. 7, 1816), p. 467. Type, by tautonymy, *Tringa squatarola* Linnaeus.

**Squatarola squatarola** (LINNAEUS): Black-bellied Plover

*Tringa Squatarola* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 149.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

Genus **LIMICOLAVIS** Shufeldt <sup>97</sup>

*Limicolavis* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 55. Type, by monotypy, *Limicolavis pluvianella* Shufeldt.

**Limicolavis pluvianella** SHUFELDT

*Limicolavis pluvianella* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 55, pl. 15, fig. 129.

? Oligocene: Lower Willow Creek, Oregon.

Family **SCOLOPACIDAE**: Woodcock, SNIPES, and SANDPIPERs

Subfamily **PALAEOTRINGINAE**: **PALAEOTRINGAS**

Genus **PALAEOTRINGA** Marsh

*Palaeotringa* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 208. Type, by subsequent designation, *Palaeotringa littoralis* Marsh (Hay, 1902).

**Palaeotringa littoralis** MARSH <sup>98</sup>

*Palaeotringa littoralis* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 208.

Paleocene (Hornerstown marl): Hornerstown, New Jersey.

**Palaeotringa vagans** MARSH

*Palaeotringa vagans* MARSH, Amer. Journ. Sci., ser. 3, vol. 3, May 1872, p. 365.

Paleocene (Hornerstown marl): Hornerstown, New Jersey.

**Palaeotringa vetus** MARSH

*Palaeotringa vetus* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 209.

Paleocene (Hornerstown marl): Arneytown, New Jersey.

<sup>97</sup> Family relationship uncertain.

<sup>98</sup> Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, pp. 23, 77, pl. 6, fig. 35, believes this to be a gull, but this is open to question.

## Subfamily SCOLOPACINAE: Woodcock and SNIPES

## Genus CAPELLA Frenzel

*Capella* FRENZEL, Beschr. Vögel und Eyer Wittenberg, 1801, p. 58. Type, by monotypy, *Scolopax coelestis* Frenzel = *Scolopax gallinago* Linnaeus.

**Capella gallinago (LINNAEUS): Common Snipe**<sup>99</sup>

*Scolopax Gallinago* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 147.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Capella anthonyi (WETMORE)**

*Gallinago anthonyi* WETMORE, Proc. Biol. Soc. Washington, vol. 33, Dec. 30, 1920, p. 78, pl. 2, figs. 1, 2.

Recent (extinct):<sup>1</sup> Cave deposits in Cueva Catedral (type locality) and Cueva Clara, near Morovis, Puerto Rico.

## Subfamily TRINGINAE: CURLEWS, YELLOWLEGS, and ALLIES

## Genus NUMENIUS Brisson

*Numenius* BRISSON, Orn., 1760, vol. 1, p. 48; vol. 5, p. 311. Type, by tau-  
tonomy, *Numenius* Brisson = *Scolopax arquata* Linnaeus.

**Numenius americanus BECHSTEIN: Long-billed Curlew**

*Numenius americanus* BECHSTEIN, in Latham, Allgem. Uebers. Vögel, vol. 4, pt. 2, 1812, p. 432.

Modern form reported from late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

**Numenius borealis (FORSTER): Eskimo Curlew**

*Scolopax borealis* J. R. FORSTER, Philos. Trans., vol. 62, 1772, p. 431.

Modern form reported from late Pleistocene (Kentuck locality): McPherson County, Kansas.

**Numenius phaeopus (LINNAEUS): Whimbrel**<sup>2</sup>

*Scolopax Phaeopus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 146.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

<sup>99</sup> *Capella delicata* (Ord), Wilson's snipe, of the previous list.

<sup>1</sup> Included here as it has not been found in living form, being known only from bones.

<sup>2</sup> *Phaeopus hudsonicus* (Latham), Hudsonian curlew of the previous list.

Genus **PALNUMENIUS** Miller

*Palnumenius* L. MILLER, Univ. California Publ. Zoöl., vol. 43, Mar. 6, 1942, p. 45. Type, by monotypy, *Palnumenius victimus* Miller.

**Palnumenius victimus** MILLER

*Palnumenius victimus* L. MILLER, Univ. California Publ. Zoöl., vol. 43, Mar. 6, 1942, p. 45, fig. 1b.

Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

Genus **BARTRAMIA** Lesson

*Bartramia* LESSON, Traité d'Orn., livr. 7, Apr. 9, 1831, p. 553. Type, by monotypy, *Bartramia laticauda* Lesson = *Tringa longicauda* Bechstein.

**Bartramia longicauda** (BECHSTEIN): Upland Plover

*Tringa longicauda* BECHSTEIN, in Latham, Allgem. Uebers. Vögel, vol. 4, pt. 2, 1812, p. 453.

Modern form reported from late Pleistocene: Meade County (Jones fauna, Vanhem formation), and McPherson County (Kentuck locality), Kansas.

Genus **TOTANUS** Bechstein

*Totanus* BECHSTEIN, Orn. Taschenb. Deutschland, vol. 2, 1803, p. 282. Type, by tautonymy, *Totanus maculatus* Bechstein = *Scolopax totanus* Linnaeus.

**Totanus melanoleucus** (GMELIN): Greater Yellowlegs

*Scolopax melanoleuca* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 659.

Modern form reported from Pleistocene: Fossil Lake, Oregon; Rancho La Brea, Los Angeles, and McKittrick, Kern County, California.

## Subfamily CALIDRIINAE: SANDPIERS, GODWITS, and ALLIES

Genus **CALIDRIS** Merrem

*Calidris pacis* MERREM, Lit. Zeitung, vol. 2, No. 168, June 8, 1804, col. 542. Type, by tautonymy, *Tringa calidris* Gmelin = *Tringa canutus* Linnaeus.

**Calidris pacis** BRODKORB

*Calidris pacis* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 22, figs. 19, 20.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

Genus **EROLIA** Vieillot

*Erolia* VIEILLOT, Analyse, 1816, p. 55. Type, by monotypy, *Erolia variegata* Vieillot = *Scolopax testacea* Pallas.

**Erolia penepusilla** BRODKORB

*Erolia penepusilla* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 23, fig. 21.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

**Erolia alpina** (LINNAEUS): Dunlin

*Tringa alpina* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 149.

Modern form reported from late Pleistocene: McKittrick, Kern County, California.

Genus **LIMNODROMUS** Wied

*Limnodromus* WIED, Beitr. Naturg. Brasil, vol. 4, Abt. 2, 1833, p. 716. Type, by monotypy, *Scolopax noveboracensis* Gmelin = *Scolopax grisea* Gmelin.

**Limnodromus griseus** (GMELIN): Dowitcher

*Scolopax grisea* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 658.

Modern form reported late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

Genus **MICROPALAMA** Baird

*Micropalama* BAIRD, Rep. Expl. and Surv. R. R. Pac., vol. 9, 1858, pp. xxii, xlvi, 714, 726. Type, by monotypy, *Tringa himantopus* Bonaparte.

**Micropalama hesternus** WETMORE

*Micropalama hesternus* WETMORE, Proc. U. S. Nat. Mus., vol. 64, art. 5, Jan. 15, 1924, p. 11, figs. 6-7.

Upper Pliocene (Blancan): 2 miles south of Benson, Arizona.

Genus **LIMOSA** Brisson

*Limosa* BRISSON, Orn., 1760, vol. 1, p. 48; vol. 5, p. 261. Type, by tautonymy, *Limosa* Brisson = *Scolopax limosa* Linnaeus.

**Limosa vanrossemi** MILLER

*Limosa vanrossemi* L. H. MILLER, Carnegie Inst. Washington Publ. 349, August 1925, p. 116, pl. 6.

Middle Miocene (Temblor, *Turritella oyocana* zone): Lompoc, California.

## Family RECURVIROSTRIDAE: IBIS-BILLS, AVOCETS, and STILTS

## Subfamily RECURVIROSTRINAE: AVOCETS and STILTS

## Genus RECURVIROSTRA Linnaeus

*Recurvirostra* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 151. Type, by monotypy, *Recurvirostra avosetta* Linnaeus.

## Recurvirostra americana GMELIN: Avocet

*Recurvirostra americana* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 693.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; Rancho La Brea, Los Angeles, and McKittrick, Kern County, California.

## Genus HIMANTOPUS Brisson

*Himantopus* BRISSON, Orn., 1760, vol. 1, p. 46; vol. 5, p. 33. Type, by tautonomy, *Himantopus* Brisson = *Charadrius himantopus* Linnaeus.

## Himantopus mexicanus (MÜLLER): Black-necked Stilt

*Charadrius Mexicanus* P. L. S. MÜLLER, Natursyst., Suppl., 1776, p. 117.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.

## Family PRESBYORNITHIDAE: PRESBYORNITHES

## Genus PRESBYORNIS Wetmore

*Presbyornis* WETMORE, Ann. Carnegie Mus., vol. 16, Apr. 10, 1926, p. 396. Type, by monotypy, *Presbyornis pervetus* Wetmore.

## Presbyornis pervetus WETMORE

*Presbyornis pervetus* WETMORE, Ann. Carnegie Mus., vol. 16, Apr. 10, 1926, p. 396, pl. 37, figs. 10-20.

Eocene (Lower Green River formation): White River, Utah, 2 miles from Colorado State line.

## Family PHALAROPODIDAE: PHALAROPES

## Genus LOBIPES Cuvier

*Lobipes* CUVIER, Règne Animal, vol. 1, 1817 (Dec. 7, 1816), p. 495. Type, by original designation, *Tringa hyperborea* Linnaeus = *Tringa lobata* Linnaeus.

## Lobipes lobatus (LINNAEUS): Northern Phalarope

*Tringa lobata* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 148.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.

Suborder LARI: SKUAS, GULLS, TERNS, and SKIMMERS

Family STERCORARIIDAE: JAEGERS and SKUAS

Genus STERCORARIUS Brisson

*Stercorarius* BRISSON, Orn., 1760, vol. 1, p. 56; vol. 6, p. 149. Type, by tau-  
tonomy, *Stercorarius* Brisson = *Larus parasiticus* Linnaeus.

*Stercorarius shufeldti* HOWARD

*Stercorarius shufeldti* H. HOWARD, Carnegie Inst. Washington Publ. 551,  
Jan. 25, 1946, p. 184, pl. 2, figs. 1, 2.

Late Pleistocene: Fossil Lake, Oregon.<sup>3</sup>

Family LARIDAE: GULLS and TERNS

Subfamily LARINAE: GULLS

Genus LARUS Linnaeus<sup>4</sup>

*Larus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 136. Type, by subsequent  
designation, *Larus marinus* Linnaeus (Selby, 1840).

*Larus glaucescens* NAUMANN: Glaucous-winged Gull

*Larus glaucescens* NAUMANN, Naturg. Vögel Deutschl., vol. 10, 1840, p. 351.

Modern form reported from late Pleistocene (Palos Verdes for-  
mation): San Pedro, Los Angeles County, California.

*Larus californicus* LAWRENCE: California Gull

*Larus californicus* LAWRENCE, Ann. Lyc. Nat. Hist. New York, vol. 6, 1854,  
p. 79.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.

*Larus philadelphia* (ORD): Bonaparte's Gull

*Sterna Philadelphia* ORD, in Guthrie, Geogr., 2d Amer. ed., 1815, p. 319.

Modern form reported from late Pleistocene: Fossil Lake, Oregon.<sup>5</sup>

*Larus oregonus* SHUFELDT

*Larus oregonus* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891,  
p. 820.

Late Pleistocene: Fossil Lake, Oregon.

<sup>3</sup> The type of *Stercorarius shufeldti* originally was identified by Shufeldt as *Larus argentatus*, this specimen being the basis for the record of the herring gull from Fossil Lake.

<sup>4</sup> *Larus vero* Shufeldt, Journ. Geol., January-February 1917, p. 18, has been identified by Wetmore as *Nyctanassa violacea* Linnaeus (Smithsonian Misc. Coll., vol. 85, No. 2, Apr. 13, 1931, p. 16).

<sup>5</sup> Records of *Xema sabini* from Fossil Lake, so far as identified, refer to *Larus philadelphia*.

**Larus pristinus SHUFELDT<sup>6</sup>**

*Larus pristinus* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 54, pl. 14, fig. 112.

? Oligocene (John Day) : Willow Creek, Oregon.

**Larus robustus SHUFELDT**

*Larus robustus* SHUFELDT, Amer. Nat., vol. 25, No. 297, September 1891, p. 819.

Late Pleistocene : Fossil Lake, Oregon.

**Larus elmorei BRODKORB**

*Larus elmorei* BRODKORB, Wilson Bull., vol. 65, No. 2, June 30, 1953, p. 94, fig. 1.

Pliocene (Bone Valley formation) : Near Brewster, Polk County, Florida.

**Genus GAVIOTA Miller and Sibley<sup>7</sup>**

*Gaviota* A. H. MILLER and C. G. SIBLEY, Auk, vol. 58, No. 4, October 1941, p. 563. Type, by monotypy, *Gaviota niobrara* Miller and Sibley.

**Gaviota niobrara MILLER and SIBLEY**

*Gaviota niobrara* A. H. MILLER and C. G. SIBLEY, Auk, vol. 58, No. 4, October 1941, p. 563, fig. 1.

Late Upper Miocene (Barstovian, Niobrara River zone) : Niobrara Game Preserve, Cherry County, Nebraska.

**Subfamily STERNINAE: TERNS****Genus STERNA Linnaeus**

*Sterna* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 137. Type, by tautonymy, *Sterna hirundo* Linnaeus.

**Subgenus STERNA Linnaeus****Sterna forsteri NUTTALL: Forster's Tern**

*Sterna forsteri* NUTTALL, Manual Orn. U. S. and Canada, vol. 2, 1834, p. 274.

Modern form reported from late Pleistocene : Fossil Lake, Oregon.

**Genus CHLIDONIAS Rafinesque**

*Chlidonias* RAFINESQUE, Kentucky Gazette, n. s., vol. 1, No. 8, Feb. 21, 1822, p. 3, col. 5. Type, by monotypy, *Sterna melanops* Rafinesque = *Sterna surinamensis* Gmelin.

<sup>6</sup> Generic assignation in original description tentative.

<sup>7</sup> Allocation to subfamily provisional.

*Chlidonias niger* (LINNAEUS): Black Tern

*Sterna nigra* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 137.

Modern form reported from late Pleistocene: Fossil Lake, Oregon,

Suborder ALCAE: AUKS

Family ALCIDAE: AUKS, MURRES, and PUFFINS

Subfamily NAUTILORNITHINAE: NAUTILORNITHES

Genus NAUTILORNIS Wetmore

*Nautilornis* WETMORE, Ann. Carnegie Mus., vol. 16, Apr. 10, 1926, p. 392.

Type, by original designation, *Nautilornis avus* Wetmore.

*Nautilornis avus* WETMORE

*Nautilornis avus* WETMORE, Ann. Carnegie Mus., vol. 16, Apr. 10, 1926, p. 392, pl. 36, figs. 1-8.

Eocene (Lower Green River formation): White River, Utah, 2 miles from Colorado State line.

*Nautilornis proavitus* WETMORE

*Nautilornis proavitus* WETMORE, Ann. Carnegie Mus., vol. 16, Apr. 10, 1926, p. 394, pl. 36, fig. 9.

Eocene (Lower Green River formation): White River, Utah, 2 miles from Colorado State line.

Genus HYDROTHERIKORNIS Miller

*Hydrotherikornis* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 20, No. 3, Apr. 21, 1931, p. 24. Type, by monotypy, *Hydrotherikornis oregonus* Miller.

*Hydrotherikornis oregonus* MILLER

*Hydrotherikornis oregonus* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 20, No. 3, Apr. 21, 1931, p. 24, fig. 1.

Upper Eocene (Arago series): Sunset Bay, near Coos Bay, Coos County, Oregon.

Subfamily ALCINAE: AUKS and MURRES

Genus AUSTRALCA Brodkorb

*Australca* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 25. Type, by original designation, *Australca grandis* Brodkorb.

**Australca grandis BRODKORB**

*Australca grandis* BRODKORB, Florida Geol. Surv. Rep. Invest. No. 14, November 1955, p. 27, figs. 24, 29.

Pliocene (Bone Valley formation): Near Brewster, Polk County, Florida.

**Genus URIA Brisson**

*Uria* BRISSON, Orn., 1760, vol. 1, p. 52; vol. 6, p. 70. Type, by tautonymy, *Uria* Brisson = *Colymbus aalge* Pontoppidan.

**Uria aalge (PONTOPPIDAN): Common Murre**

*Colymbus aalge* PONTOPPIDAN, Danske Atlas, vol. 1, 1763, p. 621, pl. 26.

Modern form reported from late Pleistocene (Palos Verdes sand): Playa del Rey, and Mussel Rock, San Mateo County, California.

**Uria affinis (MARSH)**

*Catarractus affinis* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872, p. 259.

Pleistocene: Railroad cut on bank of Penobscot River, near Bangor, Maine.

**Uria antiqua (MARSH)**

*Catarractus antiquus* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 213.

Miocene: Tarboro, Edgecombe County, North Carolina.

**Genus MIOCEPPHUS Wetmore**

*Miocephalus* WETMORE, Journ. Morph., vol. 66, Jan. 2, 1940, p. 35. Type, by monotypy, *Miocephalus meclungi* Wetmore.

**Miocephalus meclungi WETMORE**

*Miocephalus meclungi* WETMORE, Journ. Morph., vol. 66, Jan. 2, 1940, p. 35, figs. 11-14.

Miocene (Calvert formation, zone 12): Near the mouth of Parker Creek, Calvert County, Maryland.<sup>8</sup>

**Genus BRACHYRAMPHUS Brandt**

*Brachyramphus* M. BRANDT, Bull. Sci. Acad. Imp. Sci. St.-Pétersbourg, vol. 2, No. 22, Mar. 19, 1837, col. 346. Type, by subsequent designation, *Colymbus marmoratus* Gmelin (Gray, 1840).

<sup>8</sup> Two records.

**Brachyramphus pliocenum HOWARD**

*Brachyramphus pliocenus* HOWARD, Carnegie Inst. Washington Publ. 584, June 22, 1949, p. 191.

Middle Pliocene (San Diego formation): Washington Boulevard Freeway, San Diego, California.

**Genus SYNTLIBORAMPHUS Brandt**

*Syntliboramphus* M. BRANDT, Bull. Sci. Acad. Imp. Sci. St.-Pétersbourg, vol. 2, No. 22, Mar. 19, 1837, col. 347. Type, by subsequent designation, *Alca antiqua* Gmelin (Gray, 1840).

**Syntliboramphus antiquum (GMELIN): Ancient Murrelet**

*Alca antiqua* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 554.

Modern form reported from late Pleistocene (Palos Verdes sand): San Pedro, California.

**Genus PTYCHORAMPHUS Brandt**

*Ptychoramphus* M. BRANDT, Bull. Sci. Acad. Imp. Sci. St.-Pétersbourg, vol. 2, No. 22, Mar. 19, 1837, col. 347. Type, by monotypy, *Uria aleutica* Pallas.

**Ptychoramphus aleuticum (PALLAS): Cassin's Auklet**

*Uria Alcutica* PALLAS, Zoogr. Rosso-Asiatica, vol. 2, 1811, p. 370.

Modern form reported from late Pleistocene (Palos Verdes sand): San Pedro, Los Angeles County, California.

**Genus CERORHINCA Bonaparte**

*Cerorhinca* BONAPARTE, Ann. Lyc. Nat. Hist. New York, vol. 2, 1828, p. 427. Type, by monotypy, *Cerorhinca occidentalis* Bonaparte = *Alca monocerata* Pallas.

**Cerorhinca dubia MILLER**

*Cerorhinca dubia* L. H. MILLER, Carnegie Inst. Washington Publ. 349, August 1925, p. 115, pl. 2.

Middle Miocene (Tremblor, *Turritella ocoyana* zone): Lompoc, California.

**Family MANCALLIDAE: LUCAS AUK and ALLY****Genus MANCALLA Lucas**

*Mancalla* LUCAS, Science, n.s., vol. 13, Mar. 15, 1901, p. 428. Type, by original designation, *Mancalla californiensis* Lucas.

**Mancalla californiensis** LUCAS

*Mancalla californiensis* LUCAS, Science, n.s., vol. 13, Mar. 15, 1901, p. 428.<sup>9</sup>

Pliocene: Third Street Tunnel, Los Angeles (type locality), and Newport Bay. Middle Pliocene (San Diego formation): San Diego, San Diego County, and Corona del Mar, Orange County, California.

**Mancalla diegense** (MILLER)

*Pliolunda diegense* L. H. MILLER, Trans. San Diego Soc. Nat. Hist., vol. 8, Dec. 15, 1937, p. 376, 2 figs.

Middle Pliocene (San Diego formation): Market Street, near Euclid Avenue (type locality), and Mission Hills district, San Diego, California.

## Order COLUMBIFORMES: SAND-GROUSE, PIGEONS, AND DOVES

## Suborder COLUMBAE: PIGEONS and DOVES

## Family COLUMBIDAE: PIGEONS and DOVES

## Subfamily COLUMBINAE: PIGEONS and DOVES

## Genus COLUMBA Linnaeus

*Columba LINNAEUS*, Syst. Nat., ed. 10, vol. 1, 1758, p. 162. Type, by subsequent designation, *Columba oenas* Linnaeus (Vigors, 1825).

**Columba fasciata** SAY: Band-tailed Pigeon

*Columba fasciata* SAY, in Long, Exped. Rocky Mountains, vol. 2, 1823, p. 10.

Modern form reported from late Pleistocene: Stone Man Cave, Shasta County, Rancho La Brea, Los Angeles, and Carpinteria, Santa Barbara County, California. Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

**Columba micula** (WETMORE)

*Chlorænas micula* WETMORE, Proc. U. S. Nat. Mus., vol. 64, art. 5, Jan. 15, 1924, p. 13, figs. 8-9.

Early Pleistocene: Curtis Ranch, 12 miles southeast of Benson, Arizona.

## Genus ZENAIDURA Bonaparte

*Zenaidura* BONAPARTE, Compt. Rend. Acad. Sci. Paris, vol. 40, January 1855, p. 96. Type, by original designation, *Columba carolinensis* Linnaeus.

<sup>9</sup> See also Lucas, Proc. U. S. Nat. Mus., vol. 24, Sept. 27, 1901, pp. 133-134, figs. 1, 2.

**Zenaidura macroura (LINNAEUS): Mourning Dove**

*Columba macroura* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 164.

Modern form reported from Upper Pliocene (Rexroad fauna): Meade County, Kansas. Pleistocene: San Josecito Cave, Aramberri, Nuevo León; Seminole Field, Pinellas County, Florida. Late Pleistocene: Carpenteria, Santa Barbara County, McKittrick, Kern County, and Rancho La Brea, Los Angeles, California; Meade County, Kansas (Vanhem formation, Jones fauna).

**Genus ECTOPISTES Swainson**

*Ectopistes* SWAINSON, Zool. Journ., vol. 3, No. 11, September-December 1827, p. 362. Type, by subsequent designation, *Columba migratoria* Linnaeus (Swainson, 1837).

**Ectopistes migratorius (LINNAEUS): Passenger Pigeon**

*Columba migratoria* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 285.

Modern form reported from Pleistocene: Cave deposits of Tennessee. Late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus GEOTRYGON Gosse**

*Geotrygon* GOSSE, Birds Jamaica, 1847, p. 316. Type, by subsequent designation, *Columba cristata* Latham = *Geotrygon sylvatica* GOSSE = *Columbi-gallina versicolor* Lafresnaye (Reichenbach, 1852 = 1853).

**Geotrygon larva (WETMORE)**

*Orcopelcia larva* WETMORE, Proc. Biol. Soc. Washington, vol. 33, Dec. 30, 1920, p. 79, pl. 3, figs. 1-2.

Recent (extinct):<sup>10</sup> Cave deposits in Cueva Clara (type locality) and Cueva Catedral, near Morovis; Cueva Toraño, near Utuado; kitchen middens near Mayagüez, and at Barrio Cañas, near Ponce, Puerto Rico.

Order PSITTACIFORMES: LORIES, PARROTS, PARAKEETS, and MACAWS

Family PSITTACIDAE: LORIES, PARROTS, and MACAWS

Subfamily PSITTACINAE: PARAKEETS and MACAWS

**Genus ARA Lacépède**

*Ara* LACÉPÈDE, Tableaux Ois., 1799, p. 1, Type, by subsequent designation, *Psittacus macao* Linnaeus (Ridgway, 1916).

<sup>10</sup> Included here as it has not been found in living form, being known only from bones.

**Ara tricolor BECHSTEIN: Cuban Macaw**

*Ara tricolor* BECHSTEIN, in Latham, Allg. Uebers. Vög., vol. 4, Th. 1, 1811, p. 64, pl. 1. (Cuba.)

Modern form recorded from late Pleistocene: Baños de Ciego Montero, Santa Clara Province, Cuba.

**Ara autochthones WETMORE**

*Ara autochthones* WETMORE, Journ. Agr. Univ. Puerto Rico, vol. 21, No. 1, January 1937, p. 12, pl. 1, figs. 8, 9.

Recent (extinct):<sup>11</sup> Prehistoric kitchen midden deposits at Concordia, near Southwest Cape, St. Croix, Virgin Islands.

**Genus RHYNCHOPSITTA Bonaparte**

*Rhynchopsitta* BONAPARTE, Rev. et Mag. Zool., ser. 2, vol. 6, March 1854, p. 149. Type, by monotypy, *Macrocercus pachyrhynchus* Swainson.

**Rhynchopsitta pachyrhyncha (SWAINSON): Thick-billed Parrot**

*Macrocercus pachyrhynchus* SWAINSON, Philos. Mag., n.s., vol. 1, No. 6, June 1827, p. 439.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

**Genus CONUROPSIS Salvadori**

*Conuropsis* SALVADORI, Cat. Birds Brit. Mus., vol. 20, 1891, pp. 146, 203. Type, by original designation, *Psittacus carolinensis* Linnaeus.

**Conuropsis fratercula WETMORE**

*Conuropsis fratercula* WETMORE, Amer. Mus. Nov., No. 211, Mar. 11, 1926, p. 3, figs. 5-6.

Middle Miocene (*Merychippus primus* zone, lower Sheep Creek beds): Snake Creek Quarries, Sioux County, Nebraska.

**Order CUCULIFORMES: PLANTAIN-EATERS and CUCKOOS****Suborder CUCULI: CUCKOOS, ROADRUNNERS, and ANIS****Family CUCULIDAE: CUCKOOS, ROADRUNNERS, and ANIS****Subfamily NEOMORPHINAE: GROUND CUCKOOS****Genus GEOCOCCYX Wagler**

*Geococcyx* WAGLER, Isis von Oken, vol. 24, Heft 5, May 1831, col. 524. Type, by monotypy, *Geococcyx variegata* Wagler = *Saurothera californiana* Lesson.

<sup>11</sup> Included here since it has not been found in living form, being known only from bones.

**Geococcyx californianus (LESSON): Roadrunner**

*Saurothera californiana* LESSON, Compl. Oeuvres Buffon, vol. 6, 1829, p. 420.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, McKittrick, Kern County, and Carpinteria, Santa Barbara County, California.

**Geococcyx conklingi HOWARD**

*Geococcyx conklingi* HOWARD, Condor, vol. 33, No. 5, Sept. 15, 1931, p. 208, figs. 49-50.

Pleistocene: Conkling Cavern (type locality), and Shelter Cave,<sup>12</sup> Pyramid Peak, Organ Mountains, Dona Ana County, New Mexico; San Josecito Cave, Aramberri, Nuevo León.

Order STRIGIFORMES: OWLS<sup>13</sup>

## Family PROTOSTRIGIDAE: PROTOSTRIX

## Genus PROTOSTRIX Wetmore

*Protostrix* WETMORE, Amer. Mus. Nov., No. 680, Dec. 4, 1933, p. 3. Type, by original designation, *Aquila lydekkeri* Shufeldt.

**Protostrix lydekkeri (SHUFELDT)**

*Aquila lydekkeri* SHUFELDT, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, Aug. 4, 1913, p. 298.

Eocene (Bridger formation): Lower Cottonwood Creek, Wyoming.

**Protostrix saurodosis (WETMORE)**

*Minerva saurodosis* WETMORE, Proc. Acad. Nat. Sci. Philadelphia, vol. 73, 1921 (Apr. 6, 1922), p. 455, figs. 1-2.

Eocene (Bridger formation): Near Lodgepole Trail Crossing on Dry Creek, about 10 miles from Fort Bridger, Wyoming.

**Protostrix leptosteus (MARSII)<sup>14</sup>**

*Bubo leptosteus* MARSII, Amer. Journ. Sci., ser. 3, vol. 2, August 1871, p. 126.

Eocene (Bridger formation): Grizzly Buttes, near Fort Bridger, Wyoming.

<sup>12</sup> Possibly of Recent period.

<sup>13</sup> *Aquila antiqua* Shufeldt, type of the genus *Minerva* Shufeldt, formerly considered an owl, proves to be a mammal. See Wetmore, Amer. Mus. Nov., No. 680, Dec. 4, 1933, pp. 1, 2.

<sup>14</sup> See Wetmore, Condor, 1937, pp. 84-85.

**Prostrix mimica WETMORE**

*Prostrix mimica* WETMORE, Proc. U. S. Nat. Mus., vol. 85, Jan. 17, 1938,  
p. 27, figs. 4-5

Lower Eocene (Wasatch): South side of Ten Mile Creek, 12 miles northwest of Worland, Wyoming.

## Family TYTONIDAE: BARN OWLS

## Subfamily TYTONINAE: BARN OWLS

Genus **TYTO** Billberg

*Tyto* BILLBERG, Syn. Faunae Scand., vol. 1, pt. 2, 1828, tab. A. Type, by monotypy, *Strix flammea* auct. = *Strix alba* Scopoli.

**Tyto alba (SCOPOLI): Barn Owl**

*Strix alba* SCOPOLI, Annus 1, Historico-Naturalis, 1769, p. 21.

Modern form reported from Pleistocene: Cavern deposits near Lecanto, Florida;<sup>15</sup> San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Carpinteria, Santa Barbara County and Rancho La Brea, Los Angeles, California.

**Tyto cavatica WETMORE**

*Tyto cavatica* WETMORE, Proc. Biol. Soc. Washington, vol. 33, Dec. 30, 1920,  
p. 80, pl. 3, figs. 3-6.

Recent (extinct):<sup>16</sup> Cave deposits in Cueva Toraño, near Utuado, Puerto Rico.

**Tyto ostologa WETMORE**

*Tyto ostologa* WETMORE, Smithsonian Misc. Coll., vol. 74, No. 4, Oct. 17, 1922,  
p. 2.

Recent (extinct):<sup>16</sup> Cave deposits in Grotte San Francisco near St. Michel (type locality), and caves near L'Atalye, Haiti.

**Tyto pollens WETMORE**

*Tyto pollens* WETMORE, Bull. Mus. Comp. Zoöl., vol. 80, No. 12, October 1937,  
p. 436, figs. 10-16.

Recent (extinct):<sup>16</sup> Cave deposits on Great Exuma Island, Bahama Islands.

<sup>15</sup> The record from Vero (stratum 3) is now considered to be of Recent age. See Cooke, Florida Geol. Surv., Geol. Bull. 29, 1945, pp. 306-307.

<sup>16</sup> Included here as it has not been found in living form, being known only from bones.

## Family STRIGIDAE: TYPICAL OWLS

## Genus OTUS Pennant

*Otus* PENNANT, Indian Zool., 1769, p. 3. Type, by monotypy, *Otus bakkamoena* Pennant.

**Otus asio (LINNAEUS): Screech Owl**

*Strix asio* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 92.

Modern form reported from Pleistocene: Cavern deposits near Lecanto, Florida; cave deposits of Tennessee; San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Potter Creek Cave, Shasta County, Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

**Otus flammeolus (KAUP): Flammulated Owl**

*Scops (Megascops) flammeola* KAUP, in Jardine, Contr. Orn., 1852 (1853), p. 111.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León. Late Pleistocene: Samwel Cave,<sup>17</sup> Shasta County, California.

**Otus trichopsis (WAGLER): Whiskered Owl**

*Scops trichopsis* WAGLER, Isis von Oken, Heft 3, March 1832, col. 276.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

## Genus BUBO Duméril

*Bubo* DUMÉRIL, Zool. Analytique, 1806, p. 34. Type, by tautonymy, *Strix bubo* Linnaeus.

**Bubo virginianus (GMELIN): Horned Owl**

*Strix virginiana* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 287.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; Samwel Cave, Shasta County, Carpinteria, Santa Barbara County, McKittrick, Kern County, and Rancho La Brea, Los Angeles, California. Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

**Bubo sinclairi MILLER**

*Bubo sinclairi* L. H. MILLER, Univ. California Publ., Bull. Dept. Geol., vol. 6, No. 16, Oct. 28, 1911, p. 393, figs. 4-5.

Late Pleistocene: Samwel and Potter Creek (type locality) caves, Shasta County, California.

<sup>17</sup> Recorded originally as *Microtus whitneyi*. See Miller, L. H., Trans. San Diego Soc. Nat. Hist., vol. 7, No. 19, Mar. 31, 1933, pp. 209-210.

Genus **GLAUCIDIUM** Boie

*Glaucidium* Boie, Isis von Oken, Bd. 2, 1826, col. 970. Type, by subsequent designation, *Strix passerina* Linnaeus (Gray, 1840).

**Glaucidium gnoma** WAGLER: Pygmy Owl

*Glaucidium Gnoma* WAGLER, Isis von Oken, vol. 25, Heft 3, March 1832, p. 275.

Modern form reported from late Pleistocene: Samwel Cave, Shasta County, Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

Genus **SPEOTYTO** Gloger

*Speotyto* GLOGER, Hand- und Hilfsbuch Naturg., 1842 (1841), p. 226. Type, by monotypy, *Strix cunicularia* Molina.

**Speotyto cunicularia** (MOLINA): Burrowing Owl

*Strix Cunicularia* MOLINA, Sagg. Stor. Nat. Chili, 1782, p. 263.

Modern form reported from late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

Genus **CICCABA** Wagler

*Ciccaba* WAGLER, Isis von Oken, Heft 11, 1832, col. 1222. Type, by monotypy, *Ciccaba huhula* = *Strix huhula* Daudin.

**Ciccaba virgata** (CASSIN): Mottled Owl

*Syrnium virgatum* CASSIN, Proc. Acad. Nat. Sci. Philadelphia, vol. 4, 1848 (1850), p. 124.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

Genus **STRIX** Linnaeus

*Strix* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 92. Type, by tautonymy, *Strix stridula* Linnaeus = *Strix aluco* Linnaeus.

**Strix varia** BARTON: Barred Owl

*Strix varius* BARTON, Fragm. Nat. Hist. Pennsylvania, 1799, p. 11.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Melbourne, and cavern deposits near Lecanto, Florida.

**Strix occidentalis** (XÁNTUS): Spotted Owl

*Syrnium occidentale* XÁNTUS, Proc. Acad. Nat. Sci. Philadelphia, 1859 (Jan. 10, 1860), p. 193.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

**Strix brea** HOWARD

*Strix brea* HOWARD, Condor, vol. 35, No. 2, Mar. 15, 1933, p. 66, fig. 15.

Late Pleistocene: Rancho La Brea, Los Angeles, California.

**Strix dakota** MILLER

*Strix dakota* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 27, No. 4, June 22, 1944, p. 95, fig. 8.

Lower Miocene (Rosebud formation): Flint Hill, 9 miles west-southwest of Martin, Bennett County, South Dakota.

**Genus ASIO Brisson**

*Asio* BRISSON, Orn., 1760, vol. 1, p. 28. Type, by tautonymy, *Asio* Brisson = *Strix otus* Linnaeus.

**Asio otus** (LINNAEUS):<sup>18</sup> Long-eared Owl

*Strix Otus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 92.

Modern form reported from late Pleistocene: Samwel Cave, Shasta County, McKittrick, Kern County, and Carpinteria, Santa Barbara County, California.<sup>19</sup> Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

**Asio flammeus** (PONTOPPIDAN): Short-eared Owl

*Strix flammea* PONTOPPIDAN, Dauske Atlas, vol. 1, 1763, p. 617, pl. 25.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus AEGOLIUS Kaup**

*Aegolius* KAUP, Skizz. Entw.-Gesch. Eur. Thierw., 1829, p. 34. Type, by monotypy, *Strix tengmalmi* Gmelin = *Strix funereus* Linnaeus, 1758.

**Aegolius funereus** (LINNAEUS): Boreal Owl

*Strix funerea* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 93.

Modern form reported from Pleistocene:<sup>20</sup> Shelter cave, Pyramid Peak, Organ Mountains, Dona Ana County, New Mexico.

<sup>18</sup> *Asio wilsonianus* (Lesson) of the preceding list.

<sup>19</sup> According to a communication from L. H. Miller records formerly cited from Rancho La Brea are erroneous.

<sup>20</sup> Possibly of Recent age.

*Aegolius acadicus* (GMELIN): **Saw-whet Owl**

*Strix acadica* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 296.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California. Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

Order CAPRIMULGIFORMES: **Oilbirds, Goatsuckers, and Allies**

Suborder CAPRIMULGI: **Goatsuckers, Potoos, and Frogmouths**

Family CAPRIMULGIDAE: **Goatsuckers**

Subfamily CAPRIMULGINAE: **Goatsuckers**

Genus **PHALAENOPTILUS** Ridgway

*Phalaenoptilus* RIDGWAY, Proc. U. S. Nat. Mus., vol. 3, 1880, p. 5. Type, by original designation, *Caprimulgus nuttallii* Audubon

*Phalaenoptilus nuttallii* (AUDUBON): **Poor-will**

*Caprimulgus Nuttalli* AUDUBON, Birds Amer., octavo ed., vol. 7, 1844, p. 350, pl. 495.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

Order PICIFORMES: **JACAMARS, BARBETS, TOUCANS, and WOODPECKERS**

Suborder PICI: **WOODPECKERS and WRYNECKS**

Family PICIDAE: **WOODPECKERS, WRYNECKS, and PICULETS**

Subfamily PICINAE: **WOODPECKERS**

Genus **COLAPTES** Vigors

*Colaptes* VIGORS, Trans. Linn. Soc. London, vol. 14, pt. 3, 1826, p. 457. Type, by original designation, *Cuculus auratus* Linnaeus.

*Colaptes cafer* (GMELIN): **Red-shafted Flicker**

*Picus cafer* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 431.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; Samwel and Potter Creek caves, Shasta County, Hawver Cave, El Dorado County, McKittrick, Kern County, Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

*Colaptes chrysoides* (MALHERBE): Gilded Flicker

*Geopicus (Colaptes) chrysoides* MALHERBE, Rev. et Mag. Zool., ser. 2, vol. 4, December 1852, p. 553.

Modern form reported from Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

#### Genus DRYOCOPUS Boie

*Dryocopus* BOIE, Isis von Oken, Bd. 2, 1826, col. 977. Type, by monotypy, *Picus martius* Linnaeus.

*Dryocopus pileatus* (LINNAEUS): Pileated Woodpecker

*Picus pileatus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 113.

Modern form reported from Pleistocene: Cave deposits of Tennessee. Late Pleistocene: Rancho La Brea, Los Angeles, California.

#### Genus ASYNDESMUS Coues

*Asyndesmus* COUES, Proc. Acad. Nat. Sci. Philadelphia, vol. 17, No. 1, January-March (June 11), 1866, p. 55. Type, by original designation, *Picus torquatus* Wilson = *Picus lewis* Gray.

*Asyndesmus lewis* (GRAY): Lewis' Woodpecker

*Picus Lewis* GRAY, Gen. Birds, vol. 3, 1849, app., p. 22.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, and Carpinteria, Santa Barbara County, California.

### Order PASSERIFORMES: PERCHING BIRDS

#### Suborder PASSERES: SONG BIRDS

#### Family ALAUDIDAE: LARKS

##### Genus EREMOPHILA Brehm

*Eremophila* BREHM, Isis, vol. 21, pts. 3-4, 1828, p. 322. Type, by subsequent designation, *Alauda alpestris* Linnaeus (Sharpe, 1890).

*Eremophila alpestris* (LINNAEUS): Horned Lark

*Alauda alpestris* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 166.

Modern form reported from late Pleistocene: McKittrick and Rancho La Brea, Los Angeles, California.

#### Family PALAEOSPIZIDAE: PALAEOSPIZA

##### Genus PALAEOSPIZA Allen

*Palaeospiza* ALLEN, Bull. Geol. Geogr. Surv. Terr., vol. 4, No. 2, May 3, 1878, p. 443. Type, by monotypy, *Palaeospiza bella* Allen.

**Palaeospiza bella ALLEN**

*Palaeospiza bella* ALLEN, Bull. Geol. Geogr. Surv. Terr., vol. 4, No. 2, May 3, 1878, p. 443, pl. 1, figs. 1-2.

Oligocene (Florissant lake beds):<sup>21</sup> Florissant, Colorado.

## Family HIRUNDINIDAE: SWALLOWS

## Genus PETROCHELIDON Cabanis

*Petrochelidon* CABANIS, Mus. Hein., vol. 1, October (after Oct. 23), 1851, p. 47. Type, by subsequent designation, *Hirundo melanogaster* Swainson (Gray, 1855).

**Petrochelidon pyrrhonota (VIEILLOT): Cliff Swallow**

*Hirundo pyrrhonota* VIEILLOT, Nouv. Dict. Hist. Nat., nouv. éd., vol. 14, September 1817, p. 519.

Modern form reported from late Pleistocene: McKittrick, California.

## Family CORVIDAE: JAYS, MAGPIES, and CROWS

## Subfamily GARRULINAE: JAYS and MAGPIES

## Genus CYANOCITTA Strickland

*Cyanocitta* STRICKLAND, Ann. Mag. Nat. Hist., ser. 1, vol. 15, No. 98, April 1845, p. 261. Type, by original designation, *Corvus cristatus* Linnaeus.

**Cyanocitta stelleri (GMELIN): Steller's Jay**

*Corvus stelleri* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 370.

Modern form reported from late Pleistocene: Samwel Cave, Shasta County, Hawver Cave, Eldorado County, Rancho La Brea, Los Angeles, and Carpinteria, Santa Barbara County, California.

## Genus APHELOCOMA Cabanis

*Aphelocoma* CABANIS, Mus. Hein., vol. 1, sign. 28, Oct. 15, 1851, p. 221. Type, by subsequent designation, *Garrulus californicus* Vigors (Baird, 1858).

## Subgenus APHELOCOMA Cabanis

**Aphelocoma coerulescens (Bosc): Scrub Jay<sup>22</sup>**

*Corvus coerulescens* Bosc, Bull. Soc. Sci. Philom. Paris, vol. 1, pt. 1, 1795, p. 87.

<sup>21</sup> Recent studies indicate that the age may be Oligocene.

<sup>22</sup> Recorded as *Aphelocoma californica* (Vigors), California Jay, in the preceding check-list.

Modern form reported from late Pleistocene: McKittrick, Kern County, Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

Genus **PICA** Brisson

*Pica* BRISSON, Orn., 1760, vol. 1, p. 30; vol. 2, p. 35. Type, by tautonymy, *Pica* Brisson = *Corvus pica* Linnaeus.

**Pica nuttallii** (AUDUBON): Yellow-billed Magpie

*Corvus nuttallii* AUDUBON, Birds Amer. (folio), vol. 4, 1836, pl. 362, fig. 1.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

Subfamily CORVINAE: CROWS and RAVENS

Genus **CORVUS** Linnaeus

*Corvus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 105. Type, by tautonymy, *Corvus* = *Corvus corax* Linnaeus.

**Corvus corax** LINNAEUS: Common Raven<sup>23</sup>

*Corvus Corax* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 105.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; Hawver Cave, Eldorado County, Carpinteria, McKittrick, Rancho La Brea, Los Angeles, and Playa del Rey (Palos Verdes sand), Los Angeles County, California. Pleistocene: San Josecito Cave, Aramberri, Nuevo León.

**Corvus cryptoleucus** COUCH: White-necked Raven

*Corvus cryptoleucus* COUCH, Proc. Acad. Nat. Sci. Philadelphia, vol. 7, No. 2, May 20, 1854, p. 66.

Modern form reported from late Pleistocene: McKittrick and Rancho La Brea, Los Angeles, California.

**Corvus brachyrhynchos** BREHM: Crow

*Corvus brachyrhynchos* C. L. BREHM, Beitr. Vögelkunde, vol. 2, 1822, p. 56.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida. Late Pleistocene: Potter Creek Cave, Shasta County, and Rancho La Brea, Los Angeles, California.<sup>24</sup>

<sup>23</sup> *Corvus shufeldti* Sharpe is a synonym of *C. corax*. See Howard, Carnegie Inst. Washington Publ. 551, Jan. 25, 1946, p. 189.

<sup>24</sup> Record formerly given from Carpinteria refers to *C. caurinus*.

**Corvus caurinus BAIRD: Northwestern Crow**

*Corvus caurinus* BAIRD, Rep. Expl. and Surv. R. R. Pac., vol. 9, 1858, pp. 559, 569.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

**Corvus ossifragus WILSON: Fish Crow**

*Corvus ossifragus* WILSON, Amer. Orn., vol. 5, 1812, p. 27, pl. 37, fig. 2.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

**Corvus pumilis WETMORE**

*Corvus pumilis* WETMORE, Proc. Biol. Soc. Washington, vol. 33, Dec. 30, 1920, p. 81, pl. 2, figs. 3, 4.

Recent (extinct):<sup>25</sup> Cave deposits in Cueva San Miguel (type locality), near Morovis, Puerto Rico; Kitchen midden at Concordia, near Southwest Cape, St. Croix, Virgin Islands.

**Genus GYMNORHINUS Wied**

*Gymnorhinus* WIED, Reise Nord-Amer., vol. 2, 1841, p. 21. Type, by monotypy, *Gymnorhinus cyanocephalus* Wied.

**Gymnorhinus cyanocephalus WIED: Piñon Jay**

*Gymnorhinus cyanocephalus* WIED, Reise Nord-Amer., vol. 2, 1841, p. 22.

Modern form reported from Pleistocene: Conkling Cavern, Pyramid Peak, Organ Mountains, Dona Ana County, New Mexico.

**Family SITTIDAE: NUTHATCHES**

**Subfamily SITTINAE: TYPICAL NUTHATCHES**

**Genus SITTA Linnaeus**

*Sitta* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 115. Type, by monotypy, *Sitta europaea* Linnaeus.

**Sitta canadensis LINNAEUS: Red-breasted Nuthatch**

*Sitta canadensis* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, pp. 176, 177.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, California.

<sup>25</sup> Included here as it has not been found in living form, being known only from bones. Probably this small crow existed until modern times near Lares, Puerto Rico.

**Sitta pygmaea VIGORS: Pygmy Nuthatch**

*Sitta pygmaea* VIGORS, in Zool. Beechey's Voy., 1839, p. 25, pl. 4, fig. 2.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, California.

**Family CHAMAEIDAE: WREN-TITS****Genus CHAMAEA Gambel**

*Chamaca* GAMBEL, Proc. Acad. Nat. Sci. Philadelphia, vol. 3, No. 7, January-February (May 7), 1847, p. 154. Type, by original designation, *Parus fasciatus* Gambel.

**Chamaea fasciata (GAMBEL): Wren-tit**

*Parus fasciatus* GAMBEL, Proc. Acad. Nat. Sci. Philadelphia, vol. 2, No. 10, July-August (Dec. 5), 1845, p. 265.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, California.

**Family MIMIDAE: THRASHERS and MOCKINGBIRDS****Genus TOXOSTOMA Wagler**

*Toxostoma* WAGLER, Isis von Oken, vol. 24, Heft 5 (May) 1831, col. 528. Type, by monotypy, *Toxostoma vetula* Wagler = *Orpheus curvirostris* Swainson.

**Toxostoma bendirei (COUES): Bendire's Thrasher**

*Harporhynchus bendirei* COUES, Amer. Nat., vol. 7, No. 6, June 1873, p. 330.

Modern form reported from late Pleistocene: McKittrick, Kern County, California.

**Toxostoma redivivum (GAMBEL): California Thrasher**

*Harpes rediviva* GAMBEL, Proc. Acad. Nat. Sci. Philadelphia, vol. 2, No. 10, July-August (Dec. 5), 1845, p. 264.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus OREOSCOPTES Baird**

*Oreoscoptes* BAIRD, in Baird, Cassin, and Lawrence, Rep. Expl. Surv. R. R. Pac., vol. 9, 1858, pp. xix, xxxv. Type, by monotypy, *Orpheus montanus* Townsend.

**Oreoscoptes montanus (TOWNSEND): Sage Thrasher**

*Orpheus montanus* TOWNSEND, Journ. Acad. Nat. Sci. Philadelphia, vol. 7, pt. 2, Nov. 21, 1837, p. 192.

Modern form reported from late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

### Family TURDIDAE: THRUSHES

#### Genus TURDUS Linnaeus

*Turdus* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 168. Type, by subsequent designation, *Turdus viscivorus* Linnaeus (Gray, 1840).

#### *Turdus migratorius* LINNAEUS: Robin

*Turdus migratorius* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 292.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, California.

#### Genus SIALIA Swainson

*Sialia* SWAINSON, Philos. Mag., n. s., vol. 1, No. 5, May 1827, p. 369. Type, by monotypy, *Sialia azurea* Swainson = *Motacilla sialis* Linnaeus.

#### *Sialia mexicana* SWAINSON: Western Bluebird

*Sialia mexicana* SWAINSON, Fauna Bor.-Amer., vol. 2, 1831 (February, 1832), p. 202.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, California.

### Family BOMBYCILLIDAE: WAXWINGS

#### Genus BOMBYCILLA Vieillot

*Bombycilla* VIEILLOT, Hist. Nat. Ois. Amér. Sept., vol. 1, 1807 (1808), p. 88. Type, by monotypy, *Bombycilla cedrorum* Vieillot.

#### *Bombycilla cedrorum* VIEILLOT: Cedar Waxwing

*Bombycilla cedrorum* VIEILLOT, Hist. Nat. Ois. Amér. Sept., vol. 1, 1807 (1808), p. 88, pl. 57.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, and Rancho La Brea, Los Angeles, California.

### Family LANIIDAE: SHRIKES

#### Subfamily LANIINAE: SHRIKES

#### Genus LANIUS Linnaeus

*Lanius* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 93. Type, by subsequent designation, *Lanius excubitor* Linnaeus (Swainson, 1824).

***Lanius ludovicianus* LINNAEUS: Loggerhead Shrike**

*Lanius ludovicianus* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 134.

Modern form reported from late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

**Family ICTERIDAE: MEADOWLARKS, BLACKBIRDS, and TROUPIALS****Genus *STURNELLA* Vieillot**

*Sturnella* VIEILLOT, Analyse, 1816, p. 34. Type, by monotypy, Stourne, ou Merle à fer-à-cheval Buffon = *Alauda magna* Linnaeus.

***Sturnella neglecta* AUDUBON: Western Meadowlark**

*Sturnella neglecta* AUDUBON, Birds Amer., octavo ed., vol. 7, 1844, p. 339, pl. 489.

Modern form reported from late Pleistocene: Carpinteria, McKittrick, Rancho La Brea, Los Angeles, and San Pedro (Palos Verdes formation), Los Angeles County, California.

**Genus *AGELAIUS* Vieillot**

*Agelaius* VIEILLOT, Analyse, 1816, p. 33. Type, by subsequent designation, Troupiale commandeur Buffon = *Oriolus phoeniceus* Linnaeus (Gray, 1840).

***Agelaius phoeniceus* (LINNAEUS): Red-winged Blackbird**

*Oriolus phoeniceus* LINNAEUS, Syst. Nat., ed. 12, vol. 1, 1766, p. 161.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

**Genus *EUPHAGUS* Cassin**

*Euphagus* CASSIN, Proc. Acad. Nat. Sci. Philadelphia, vol. 18, No. 5, November-December, 1866 (July 20, 1867), p. 413. Type, by monotypy, *Psarocolius cyanocephalus* Wagler.

***Euphagus cyanocephalus* (WAGLER): Brewer's Blackbird<sup>26</sup>**

*Psarocolius cyanocephalus* WAGLER, Isis von Oken, vol. 22, Heft 7 (July), 1829, col. 758.

Modern form reported from late Pleistocene: Fossil Lake, Oregon; McPherson County, Kansas (Kentuck locality).

<sup>26</sup> The record by L. H. Miller from the Pleistocene of Hawver Cave, Eldorado County, California (Univ. California Publ. Geol., vol. 6, Oct. 28, 1911, pp. 399, 400), was subsequently questioned by the same author (Condor, 1921, p. 130). In recent correspondence A. H. Miller writes that he has examined the material reported on from this cave and does not find this species represented. It is therefore omitted from the list. *Euphagus affis* Shufeldt is a synonym of *E. cyanocephalus*.

**Euphagus magnirostris MILLER**

*Euphagus magnirostris* A. H. MILLER, Univ. California Publ., Bull. Dept. Geol. Sci., vol. 19, No. 1, Dec. 21, 1929, p. 14, pl. 1, figs. f, h.

Late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus CASSIDIX Lesson**

*Cassidix* LESSON, Traité d'Orn., livr. 6, Feb. 1, 1831, p. 433. Type, by subsequent designation, *Cassidix mexicanus* Lesson = *Corvus mexicanus* Gmelin (Gray, 1840).

**Cassidix mexicanus (GMELIN): Boat-tailed Grackle**

*Corvus mexicanus* GMELIN, Syst. Nat., vol. 1, pt. 1, 1788, p. 375.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

**Genus QUISCALUS Vieillot**

*Quiscalus* VIEILLOT, Analyse, 1816, p. 36. Type, by subsequent designation, *Gracula quiscula* Linnaeus (Gray, 1840).

**Quiscalus quiscula (LINNAEUS): Grackle**

*Gracula Quiscula* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 109.

Modern form reported from Pleistocene: Seminole Field, Pinellas County, Florida.

**Genus PYELORHAMPHUS Miller**

*Pyelorhamphus* A. H. MILLER, Auk, vol. 49, No. 1, January 1932, p. 39. Type, by original designation, *Pyelorhamphus molothroides* Miller.

**Pyelorhamphus molothroides MILLER**

*Pyelorhamphus molothroides* A. H. MILLER, Auk, vol. 49, No. 1, January 1932, p. 39, pl. 4.

Quaternary (? Pleistocene):<sup>27</sup> Shelter Cave, Pyramid Peak, Organ Mountains, Dona Ana County, New Mexico.

**Genus PANDANARIS Miller**

*Pandanaris* A. H. MILLER, Condor, vol. 49, No. 1, Feb. 6, 1947, p. 22. Type, by original designation, *Pandanaris convexa* A. H. Miller.

**Pandanaris convexa MILLER**

*Pandanaris convexa* A. H. MILLER, Condor, vol. 49, No. 1, Feb. 6, 1947, p. 22, fig. 4 a-d.

Late Pleistocene: Pit "A," Rancho La Brea, Los Angeles, California.

<sup>27</sup> The deposits in which this extinct species was found are possibly of Recent age.

## Family FRINGILLIDAE: GROSBEAKS, FINCHES, SPARROWS, and BUNTINGS

## Subfamily RICHMONDENINAE: CARDINALS and ALLIES

Genus **PHEUCTICUS** Reichenbach

*Pheucticus* REICHENBACH, Av. Syst. Nat., June 1, 1850, pl. 78. Type, by subsequent designation, *Pitylus aureoventris* Lafresnaye and d'Orbigny (Gray, 1855).

**Pheucticus melanocephalus** (SWAINSON): Black-headed Grosbeak

*Guiraca melanocephala* SWAINSON, Philos. Mag., n. s., vol. 1, No. 6, June 1827, p. 438.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

## Subfamily CARDUELINAE: PURPLE FINCHES, GOLDFINCHES, and ALLIES

Genus **HESPERIPHONA** Bonaparte

*Hesperiphona* BONAPARTE, Conspl. Gen. Avium, vol. 1, sign. 64, 1850 (Feb. 3, 1851), p. 505. Type, by original designation, *Fringilla vespertina* W. Cooper.

**Hesperiphona vespertina** (COOPER): Evening Grosbeak

*Fringilla vespertina* W. COOPER, Ann. Lyc. Nat. Hist. New York, vol. 1, pt. 2, 1825, p. 220.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

Genus **CARPODACUS** Kaup

*Carpodacus* KAUP, Skizz. Entw.-Gesch. Eur. Thierw., 1829, p. 161. Type, by subsequent designation, *Loxia rosea* Pallas (Gray, 1842).

Subgenus **BURRICA** Ridgway

*Burrica* RIDGWAY, Man. North Amer. Birds, 1887, p. 390. Type, by original designation, *Fringilla mexicana* Müller.

**Carpodacus mexicanus** (MÜLLER): House Finch

*Fringilla mexicana* P. L. S. MÜLLER, Natursyst., Suppl., 1776, p. 165.

Modern form reported from late Pleistocene: McKittrick, Kern County, California.

Genus **SPINUS** Koch

*Spinus* KOCH, Syst. Baier. Zool., vol. 1, 1816, p. 233. Type, by tautonymy, *Fringilla spinus* Linnaeus.

**Spinus pinus** (WILSON): Pine Siskin

*Fringilla pinus* WILSON, Amer. Orn., vol. 2, 1810, p. 133, pl. 17, fig. 1.

Modern form reported from Pleistocene: Carpinteria and Rancho La Brea, Los Angeles, California.

**Spinus tristis** (LINNAEUS): American Goldfinch

*Fringilla tristis* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 181.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

Genus **LOXIA** Linnaeus

*Loxia* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 171. Type, by subsequent designation, *Loxia curvirostra* Linnaeus (Gray, 1840).

**Loxia curvirostra** LINNAEUS: Red Crossbill

*Loxia Curvirostra* LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 171.

Modern form reported from late Pleistocene: Carpinteria, Santa Barbara County, California.

## Subfamily EMBERIZINAE: SPARROWS and BUNTINGS

Genus **PALAEOSTRUTHUS** Wetmore

*Palaeostruthus* WETMORE, Bull. Mus. Comp. Zoöl., vol. 67, May 1925, p. 192. Type, by original designation, *Palaeospiza hatcheri* Shufeldt.

**Palaeostruthus hatcheri** (SHUFELDT)

*Palaeospiza hatcheri* SHUFELDT, Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, Aug. 4, 1913, p. 301, pl. 55, fig. 28.

Middle Pliocene: Near Long Island, Kansas.

Genus **PIPILO** Vieillot

*Pipilo* VIEILLOT, Analyse, 1816, p. 32. Type, by monotypy, *Pinson aux yeux rouges* Buffon = *Fringilla erythrophthalma* Linnaeus.

**Pipilo maculatus** SWAINSON: Spotted Towhee

*Pipilo maculata* SWAINSON, Philos. Mag., n. s., vol. 1, 1827, p. 434.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, and Carpinteria, California.

**Pipilo fuscus SWAINSON: Brown Towhee**

*Pipilo fusca* SWAINSON, Philos. Mag., n. s., vol. 1, 1827, p. 434.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, and Carpinteria, California.

**Pipilo angelensis DAWSON**

*Pipilo angelensis* DAWSON, Condor, vol. 50, No. 2, Mar. 16, 1948, p. 39, fig. 16.

Late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus CALAMOSPIZA Bonaparte**

*Calamospiza* BONAPARTE, Geogr. and Comp. List, 1838, p. 30. Type, by monotypy, *Fringilla bicolor* J. K. Townsend = *Calamospiza melanocorys* Stejneger.

**Calamospiza melanocorys STEJNEGER: Lark Bunting**

*Calamospiza melanocorys* STEJNEGER, Auk, vol. 2, No. 1, January 1885, p. 49.

Modern form reported from late Pleistocene: Meade County, Kansas (Jones fauna, Vanhem formation).

**Genus AMMODRAMUS Swainson**

*Ammodramus* SWAINSON, Philos. Mag., n. s., vol. 1, No. 6, June 1827, p. 435.

Type, by monotypy, *Ammodramus bimaculatus* Swainson.

**Ammodramus savannarum (GMELIN): Grasshopper Sparrow**

*Fringilla savannarum* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 921. (Jamaica).

Modern form reported from Pleistocene: Near Haile, 4 miles northeast of Newberry, Alachua County, Florida.

**Genus POOECETES Baird**

*Pooecetes* BAIRD, in Baird, Cassin, and Lawrence, Rep. Expl. Surv. R. R. Pac., vol. 9, 1858, pp. xx, xxxix. Type, by monotypy, *Fringilla graminea* Gmelin.

**Pooecetes gramineus (GMELIN): Vesper Sparrow**

*Fringilla graminea* GMELIN, Syst. Nat., vol. 1, pt. 2, 1789, p. 922.

Modern form reported from Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus CHONDESTES Swainson**

*Chondestes* SWAINSON, Philos. Mag., n. s., vol. 1, No. 6, June 1827, p. 435.

Type, by monotypy, *Chondestes strigatus* Swainson.

**Chondestes grammacus (SAY): Lark Sparrow**

*Fringilla grammaca* SAY, in Long, Exped. Rocky Mts., vol. 1, 1823, p. 139.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus AMPHISPIZA Coues**

*Amphispiza* COUES, Birds Northwest, 1874, p. 234. Type, by original designation, *Emberiza bilineata* Cassin.

**Amphispiza bilineata (CASSIN): Black-throated Sparrow**

*Emberiza bilineata* CASSIN, Proc. Acad. Nat. Sci. Philadelphia, vol. 5, No. 5, September-October (Dec. 7), 1850, p. 104, pl. 3.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Amphispiza belli (CASSIN): Bell's Sparrow**

*Emberiza Belli* CASSIN, Proc. Acad. Nat. Sci. Philadelphia, vol. 5, No. 5, September-October (Dec. 7), 1850, p. 104, pl. 4.

Modern form reported from late Pleistocene: McKittrick, Kern County, and Rancho La Brea, Los Angeles, California.

**Genus SPIZELLA Bonaparte**

*Spizella* BONAPARTE, Giornale Arcadico, vol. 52, October-December 1831 (1832), p. 205. Type, by monotypy, *Fringilla pusilla* Wilson.

**Spizella passerina (BECHSTEIN): Chipping Sparrow**

*Fringilla passerina* BECHSTEIN, in Latham, Allgem. Uebers. Vögel, vol. 3, pt. 2, 1798, p. 544, pl. 120, fig. 1.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus ZONOTRICHIA Swainson**

*Zonotrichia* SWAINSON, in Swainson and Richardson, Fauna Bor.-Amer., vol. 2, 1831 (February 1832), p. 493. Type, by subsequent designation, *Fringilla pensylvanica* Latham = *Fringilla albicollis* Gmelin (Bonaparte, 1831).

**Zonotrichia leucophrys (FORSTER): White-crowned Sparrow**

*Emberiza leucophrys* J. R. FORSTER, Philos. Trans., vol. 62, art. 29, 1772, p. 426.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**Genus PASSERELLA Swainson**

*Passerella* SWAINSON, Nat. Hist. and Class. Birds, vol. 2, July 1, 1837, p. 288.  
Type, by monotypy, *Fringilla iliaca* Merrem.

**Passerella iliaca (MERREM): Fox Sparrow**

*Fringilla iliaca* MERREM, Avium Rar. Icones et Descrip., vol. 2, 1786, p. 37,  
pl. 10.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, and Carpinteria, California.

**Genus MELOSPIZA Baird**

*Melospiza* BAIRD, in Baird, Cassin, and Lawrence, Rep. Expl. Surv. R. R. Pac., vol. 9, 1858, pp. xx, XL, 440, 476. Type, by original designation, *Fringilla melodia* Wilson.

**Subgenus MELOSPIZA Baird**

**Melospiza melodia (WILSON): Song Sparrow**

*Fringilla melodia* WILSON, Amer. Orn., vol. 2, 1810, p. 125, pl. 16, fig. 4.

Modern form reported from late Pleistocene: Rancho La Brea, Los Angeles, California.

**INCERTAE SEDIS**

**Genus CIMOLOPTERYX Marsh<sup>28</sup>**

*Cimolopteryx* MARSH, Amer. Journ. Sci., ser. 3, vol. 38, 1889, p. 83, footnote. Type, by monotypy, *Cimolopteryx rarus* Marsh.

**Cimolopteryx rarus MARSH**

*Cimolopteryx rarus* MARSH, Amer. Journ. Sci., ser. 3, vol. 38, July 1889, p. 83, footnote.

Upper Cretaceous (Lance formation): Niobrara County, Wyoming.

**Cimolopteryx retusus MARSH**

*Cimolopteryx retusus* MARSH, Amer. Journ. Sci., ser. 3, vol. 44, August 1892, p. 175.

Upper Cretaceous (Lance formation): Niobrara County, Wyoming.

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<sup>28</sup> Lambrecht, Handb. Palaeorn., 1933, pp. 586-587, lists this genus at the end of the Ichthyornithiformes. He suggests that the two species belong in separate genera, possibly in different families. See also Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, pp. 11, 12, and 76.

## Genus EOPTERYX Meyer

*Eopteryx* MEYER, Ber. Senckenberg. Nat. Ges. Frankfurt am Main, 1887, p. 14. Type, by monotypy, *Eopteryx mississippiensis* Meyer.

Eopteryx mississippiensis MEYER<sup>29</sup>

*Eopteryx mississippiensis* MEYER, Ber. Senckenberg. Nat. Ges. Frankfurt am Main, 1887, p. 14, pl. 2, figs. 22a-22c.

Eocene: Jackson, Mississippi.

## (Genus uncertain)

Falco falconellus SHUFELDT<sup>30</sup>

*Falco falconella* SHUFELDT, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, p. 40, pl. 15, figs. 139-143.

Eocene (Bridger formation): Dry Creek?, Wyoming.

## Genus FONTINALIS Lesquereux

*Fontinalis* LESQUEREAUX, Rep. U. S. Geol. Surv. Terr., vol. 8, 1883, p. 135. Type, by monotypy, *Fontinalis pristin* Lesquereux.

Fontinalis pristina LESQUEREAUX<sup>31</sup>

*Fontinalis pristina* LESQUEREAUX, Rep. U. S. Geol. Surv. Terr., vol. 8, 1883, p. 135, pl. 21, fig. 9.

Oligocene (Florissant lake beds): Florissant, Colorado.

## Genus HEBE Shufeldt

*Hebe* SHUFELDT, Journ. Geol., vol. 21, October-November (Nov. 1), 1913, p. 644. Type, by monotypy, *Hebe schucherti* Shufeldt.

Hebe schucherti SHUFELDT<sup>32</sup>

*Hebe schucherti* SHUFELDT, Journ. Geol., vol. 21, October-November (Nov. 1), 1913, p. 644, fig. 10, a, b.

Eocene: <sup>33</sup> 5 miles west of Green River, Wyoming.

<sup>29</sup> Described from a fragmentary vertebra.

<sup>30</sup> Not a falcon; relationships doubtful. See Wetmore, A., Proc. U. S. Nat. Mus., vol. 84, Nov. 3, 1936, pp. 77-78.

<sup>31</sup> Type a fragment of a fossil feather, described originally as a species of moss. See Knowlton, Proc. U. S. Nat. Mus., vol. 51, Nov. 24, 1916, p. 245, and Wetmore, Bull. Mus. Comp. Zoöl., vol. 67, May 1925, p. 184. Possibly of Oligocene age.

<sup>32</sup> Said to be a passeriform bird with four notches in the posterior border of the sternum; of uncertain affinity. *Hebe* Shufeldt, 1913, is preoccupied by *Hebe* Risso, 1826 (applied to a genus of crustaceans), so that should the form here under consideration be definitely identified it may require a new generic appellation. There is no necessity for action at this time in view of its uncertain relationships.

<sup>33</sup> From data furnished by Dr. M. R. Thorpe, of the Peabody Museum, Yale University.

Genus **IGNOTORNIS** Mehl

*Ignotornis* MEHL, Amer. Journ. Sci., ser. 5, vol. 21, May 1931, p. 443. Type, by monotypy, *Ignotornis mcconnelli* Mehl.

**Ignotornis mcconnelli** Mehl<sup>34</sup>

*Ignotornis mcconnelli* MEHL, Amer. Journ. Sci., ser. 5, vol. 21, May 1931, p. 444, fig. 1.

Cretaceous (Dakota sandstone): About 1½ miles northwest of Golden, Colorado.

Genus **LAOPTERYX** Marsh

*Laopteryx* MARSH, Amer. Journ. Sci., ser. 3, vol. 21, April 1881, p. 341. Type, by monotypy, *Laopteryx priscus* Marsh.

**Laopteryx priscus** MARSH<sup>35</sup>

*Laopteryx priscus* MARSH, Amer. Journ. Sci., ser. 3, vol. 21, April 1881, p. 341.

Upper Jurassic (Morrison formation): Quarry 9, Como Bluff, southern Wyoming.

Genus **LAORNIS** Marsh

*Laornis* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 206. Type, by monotypy, *Laornis edwardsianus* Marsh.

**Laornis edwardsianus** MARSH<sup>36</sup>

*Laornis edwardsianus* MARSH, Amer. Journ. Sci., ser. 2, vol. 49, March 1870, p. 206.

Paleocene (Hornerstown marl): Near Birmingham, New Jersey.

Genus **PALAEONORNIS** Emmons

*Palaconornis* EMMONS, Amer. Geol., pt. 6, 1857, p. 148. Type, by monotypy, *Palaconornis struthionoides* Emmons.

**Palaconornis struthionoides** EMMONS<sup>37</sup>

*Palaconornis Struthionoides* EMMONS, Amer. Geol., pt. 6, 1857, p. 148, fig. 114.

? Triassic: Anson County, North Carolina.

<sup>34</sup> Described from fossil impressions of 4-toed footprints, apparently with webs connecting the three anterior toes.

<sup>35</sup> J. D. Dana, Amer. Journ. Sci., ser. 5, vol. 12, July 1926, pp. 3, 4, considered the avian affinity of this supposed species as not definitely certain.

<sup>36</sup> Doubtfully related to Anseriformes. Lambrecht, Handb. Palaeorn., 1933, pp. 526-527, has placed it uncertainly after the Aramidae.

<sup>37</sup> Affinity doubtful: possibly not avian.

Genus **UINTORNIS** Marsh

*Uintornis* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872, p. 259.  
Type, by monotypy, *Uintornis lucaris* Marsh.

**Uintornis lucaris** MARSH<sup>38</sup>

*Uintornis lucaris* MARSH, Amer. Journ. Sci., ser. 3, vol. 4, October 1872, p. 259.  
Eocene (Bridger formation): Near Henry's Fork, Wyoming.

Genus **YALAVIS** Shufeldt

*Yalavis* SHUFELDT, Journ. Geol., vol. 21, October-November (Nov. 1), 1913,  
p. 649. Type, by monotypy, *Yalavis tenuipes* Shufeldt.

**Yalavis tenuipes** SHUFELDT<sup>39</sup>

*Yalavis tenuipes* SHUFELDT, Journ. Geol., vol. 21, October-November (Nov. 1),  
1913, p. 649, figs. 11c and 12c.

Geologic age and locality of occurrence not known.

<sup>38</sup> According to Shufeldt, Trans. Connecticut Acad. Arts Sci., vol. 19, February 1915, pp. 50-52, 77, pl. 6, fig. 42, this species is of uncertain affinity, and is not a woodpecker as suggested by Marsh.

<sup>39</sup> Said in the original description to be a passeriform bird of uncertain affinity.